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No. XX., OF VOL. I., 1937. LONDON, SATURDAY, MAY 15, 1937. Pp. 120—Price 1s.
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No 5933 LONDON: SATURDAY, MAY 15, 1937 CCXXXII

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ADDRESSES AND ORIGINAL ARTICLES

OBSERVATIONS ON MALIGNANT DISEASE OF THE THYROID GLAND*

BY ALFRED HAAS, M.D.
OF MUNICH

THE proper study of human life, to paraphrase Pope, is the study of human relationships. When human beings, either as a community or as individuals, fail to develop and maintain adequate reciprocal relationships neurosis makes its appearance, as may be observed in current European history or amongst the visitors to any medical consulting-room! When the cells of which the human organism is composed default in the same way, there is engendered disease—inflammation, degeneration, neoplasm—as may be seen in any operating theatre or post-mortem room.

In no cell community is this better illustrated than in the thyroid gland which has to bear a large share of the stresses that the human frame is called upon to endure, psychological and chemical. There is no need then for surprise that the thyroid gland reacts in many curious ways, some of which it is my purpose to describe here. The results of its failure to function or of its over-activity are familiar to all, but it is not quite so well known what happens when hypertrophic and degenerative changes pass over the narrow borderline between degeneration and malignancy. It is this aspect which forms the burden of this communication.

There is general agreement that in mountainous countries where goitre is endemic carcinoma of the thyroid is relatively common, because it always develops in a gland already the subject of degenerative changes, very often the so-called adenomatous or nodular goitre.

Estimates of the frequency of this malignant change vary with different observers, but the following

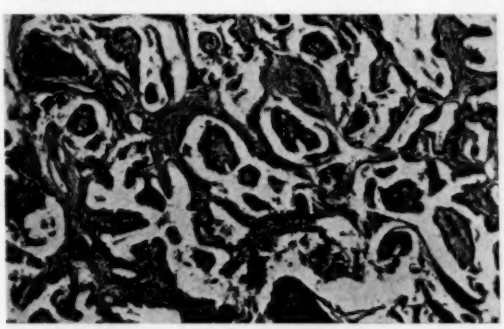

FIG. 1a.—Metastasis of a papillary adenocarcinoma of the thyroid with very large alveoli; the stroma is very rich in fibroblasts.

short statistical summary gives a general idea of its frequency. Of 3500 cases published by Kocher, 235 were proved malignant and 75 were doubtful (6·8 to 8·8 per cent.). Wilson investigated 10,682 goitres, and among these 297 were malignant (2·78 per cent.). I myself observed that among 5000 goitres operated upon between 1920 and 1936, 35 of them were certainly malignant, that is to say, 1 in 143 (0·7 per cent.). Among these every kind of malignant change was fairly evenly represented. Only true sarcomas were rare (2).

Speaking generally, malignant thyroid tumours are rare. The New York State Institute for Cancer

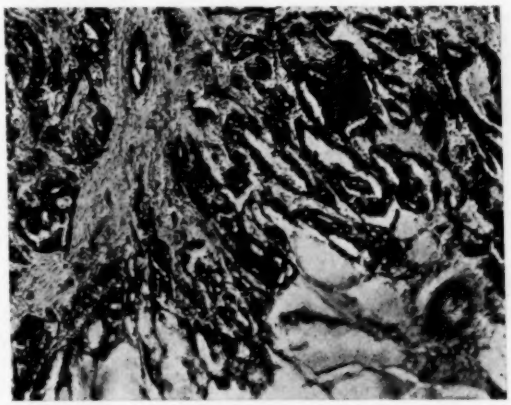

FIG. 1b.—The small primary tumour of the thyroid. The picture shows the typical buds of the papillary cancer.

Research reports that in twenty-four years there have only been 42 cases, that is 0·37 per cent. of all malignant tumours.

Carcinoma of the thyroid has one important characteristic which distinguishes it from carcinoma elsewhere; it relatively seldom gives rise to metastases in the lymphatic system, but frequently the large thin-walled veins on the surface of the goitre are invaded, and dissemination takes place by the blood stream.

According to Bartels the lymphatics of the thyroid are arranged in two groups. One runs upwards medially and laterally following the perivascular lymphatic channels, and secondary deposits may be found in the corresponding lymphatic glands. The second group runs downwards anterior and lateral to the trachea, and finally drains into the deep cervical and supraclavicular glands; and this latter is the commonest site for secondary lymphatic deposits.

As I have said before, invasion of the veins is the most frequent path of dissemination and the bones are the most frequent sites for metastases; osseous secondary tumours are as common as in carcinoma of the prostate. The bones are involved in the following order of frequency: skull, spine, sternum, humerus, femur, ribs, pelvis, clavicles, jaw, radius, calcaneum. Visceral metastases are well known to occur, often in the lungs, sometimes in the liver, and are not at all uncommon in the brain.

Another well-known and important characteristic of thyroid tumours is that the primary tumour may be very small, so small that apart from a histological examination it may not be found, yet the secondary deposits may be large and widespread. It is of interest that bronchial carcinoma sometimes behaves in the same way.

Last year I operated on a patient who had a tumour of the left frontal bone the size of half a crown; this was removed with a large piece of surrounding healthy bone and of the underlying dura which was involved. When I looked at the section it was that of a papillary carcinoma which I thought, considering its histological structure,

* A clinical lecture given at the Middlesex Hospital on March 5th, 1937.

had its origin in the thyroid gland. As a logical sequel, ten days later I removed a fair-sized nodular goitre from the patient's neck. This was cut in serial sections, and after the most laborious examination of each piece the primary tumour was found, hardly larger than a pea. Its histology corresponded exactly with that of the tumour in the skull. Figs. 1 a and 1 b show these two tumours.

On the whole the best classification of epithelial

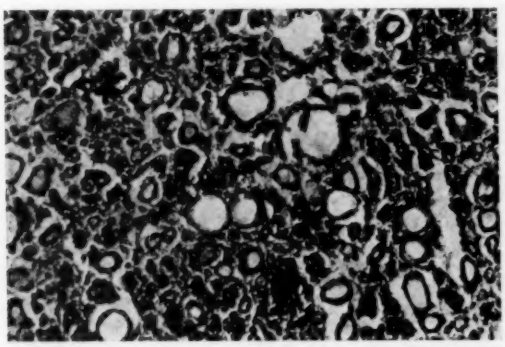

FIG. 2a.—Metastasis of a malignant adenoma of the thyroid. The metastasis shows only more adenomatous parts rich in cells with compression of the acini, and also many alveoli and production of colloid on other parts.

tumours of the thyroid is that of Wegelin, which is based on that of Langhans:

(1) *Metastasing malignant adenoma.*—(*a*) The small-cell adenoma. (*b*) The large-cell adenoma.
(2) *The proliferating goitre of Langhans.*
(3) *The papillary epithelial tumours.*
(4) *The true thyroid cancers.*—(*a*) Carcinoma solidum: (i) the scirrhus form; (ii) the medullary form; and (iii) carcinoma simplex. (*b*) Cylindrical-cell carcinoma. (*c*) Squamous-cell epithelioma.

Formerly all these malignant tumours were grouped together on account of their sinister reputation, and even to-day this view is held by many surgeons. It has been shown recently however by de Quervain and others that with a combination of operation and deep X ray therapy some remarkable results can be obtained in epithelial tumours.

METASTASIS IN BONE

There is one type of malignant goitre which does not easily go into this general classification, and it is of great interest to surgical pathologists. In the last few years I have seen two patients each with large bone tumours, which on section gave the histological picture of a nodular goitre. When the goitre was removed only adenomatous changes were found, and nothing to suggest malignancy. This is, of course, not an original observation; Cohnheim in 1876 published an autopsy case and thereafter quite a number of further cases were recorded, though in many of them a really adequate examination of the thyroid gland was not made.

In dealing with these cases most surgeons content themselves with either removing the metastatic tumour or irradiating it without removing the thyroid. This attitude, which may have been justified in some metastatic tumours, should now be modified because it is certainly possible by the combination of operation and radiation to considerably prolong the lives of these patients. As an illustration of this, a short account of the two patients just mentioned is appended.

A woman, aged 61, was admitted to my clinic on Sept. 14th, 1933. Her story, which extended over ten years, was as follows: She complained of slowly increasing right-sided headaches accompanied by giddiness and frequent vomiting. Later a tumour developed in the right parietal bone which steadily increased in size. She became increasingly nervous and was troubled by an audible bruit in the tumour; there was a medium-sized goitre to which she paid little attention because they are so common in Bavaria. Over the right parietal bone was a fixed pulsating tumour the size of a tangerine; the skin over it was blue, and pulsation could be heard and felt; it was slightly diminished by compression of the temporal artery. Pressure on the tumour produced no discomfort; at its edge a distinct bony wall could be felt. There were no signs of intracranial pressure; cranial nerves were not involved. The knee- and ankle-jerks were increased on the left side.

In the neck was an ordinary rather hard goitre, each lobe about the size of a fist, the left a little larger than the right. There were no signs of malignancy or compression of adjacent structures. There was a slight increase in the pulse-rate (102) and some cardiac dilatation. Radiography showed a circular defect of the left parietal bone.

To sum up, here was an elderly woman with a very common type of goitre, who had a slowly growing, pulsating tumour of the skull which caused slight headache and giddiness. A secondary thyroid tumour was the most probable diagnosis. The patient's general condition was good, and so without any particular risk she was operated on, using a local anæsthetic after a preliminary injection of Eucadol and scopolamine. When the tumour was exposed it looked just like an ordinary vascular goitre, and was removed together with a wide margin of normal bone and the underlying dura which was also involved. When the dura was partly raised the anterior aspect of the cerebral sulcus was also seen to be invaded, and a thin layer of brain was resected with a diathermy loop.

The patient recovered comparatively quickly; there was a post-operative paresis of the left arm and leg, but in a month this was so far recovered that she could use her left hand to perform simple movements. One month later a symmetrical goitre was almost completely removed, a very small amount of unchanged thyroid tissue being left on the right side. She recovered uneventfully from the goitre operation and was soon walking about the clinic,

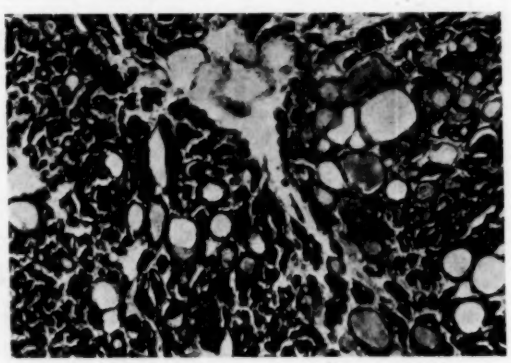

FIG. 2b.—The goitre gives the same picture, presenting structures of small alveoli without definite lumina, and zones in which alveoli were more adult and contain masses of colloid.

training her partially paralysed arm and leg, and having intensive deep X ray therapy. Eleven weeks after the first operation she left the clinic and was able to do her ordinary housework.

Here then is a case interesting enough from a technical point of view, the sort of thing that any surgeon likes to do and report; but the major and real interest lies in the pathological examination of

these two tumours. The secondary skull tumour, both grossly and histologically, was just like an ordinary nodular goitre, adenomatous areas without colloid-alveolar areas containing colloid secretion. The thyroid itself was examined with great care, but serial sections failed to show any signs of malignancy. Many parts exactly resembled the skull tumour.

FIG. 3.—Destruction of the ischium by metastasising malignant adenoma of the thyroid.

The stroma showed marked and extensive hyaline degeneration and some of these degenerated areas were calcified (Figs. 2 a and 2 b).

In June, 1934, nine months later, she returned, complaining of pain in the back. There was tenderness of the fifth lumbar area; radiography however was negative. The pain was very severe and as it was presumably due to a metastasis she was given deep X ray therapy. After three weeks of this the pain had gone. She came back again in March, 1936, nearly two years later, with violent pain in the right lower limb, especially severe round the hip. This time a radiogram showed widespread destruction of the ischium and a secondary in the second lumbar vertebra (Fig. 3). She was again given intensive irradiation and since then has been well and able to do her work.

This case illustrates the typical course of such a malignant adenoma, showing its nature only by a very slowly developing secondary deposit in the skull, without signs of malignancy in the primary growth itself, and what was left behind of the thyroid showed no change in spite of the growth of further secondary deposits months later—and with it all, the patient can do her work.

I have had another similar case.

A man, aged 42, came in September, 1936, complaining of pain in the left leg for three years, and subsequently his right leg became painful. For the last three years there had been a slowly growing painless tumour over the sternum, and about a year previously a goitre had been removed in another hospital. During the war he was said to have had tuberculosis, but had recovered.

On examination he was a strong man with no signs of disease except those I am about to describe. Over the manubrium sterni at the level of the left sternoclavicular joint there was a tumour the size of an apricot situated in and expanding the bone, which pulsated and a systolic murmur was audible. In the upper lobe of the left lung there was dullness, and on auscultation sibilant and coarse rhonchi. There was tenderness on palpation over the third, fourth, and fifth lumbar vertebræ; movement was limited and the muscles were rigid. Pressure on the head produced intense pain in the back. Both ankle-jerks were absent and knee-jerks diminished, and there was hyperæsthesia on the external aspect of the dorsum of the foot (second sacral) and a peri-anal anæsthesia.

X ray films of the lumbar spine showed a large area of bone destruction in the body of the fourth lumbar. It will be seen that only a thin shell of bone remained (Fig. 4).

This clinical picture is, as you see, very characteristic of malignant goitre; only the absence of recurrence in the neck was against it. I found out that it was a large adenomatous goitre which had compressed the trachea and on this account was removed. Microscopical examination was done by a distinguished pathologist, Prof. Oberndorfer, now in Istanbul, who found no sign of malignancy in many sections.

Fig. 5 shows a section of such a goitre. Most of the acini are compressed so that the lumen is obliterated and many parts are without colloid; there is no penetration of the basement membrane and no invasion of the vessels. Further to elucidate this case, a piece of tissue was removed with a diathermy loop. It was a vascular goitre-like tumour, and so on microscopic examination proved to be a colloid adenoma with colloid-filled acini (Fig. 6). The stroma showed hyaline degeneration and there was a thick, strong capsule.

After intensive irradiation the chest tumour diminished rapidly; three weeks later it was below the level of the sternum. The symptoms of compression of the cauda equina were relieved by extension, but in order to prevent collapse of the vertebral body an Albee operation was done on Oct. 14th, 1936, a solid bone-graft from the tibia being used. Three weeks later the spinal metastasis was irradiated with the expected result that the pain disappeared. The reflex and sensory changes remained unaffected. Four weeks after the Albee operation he was walking with a light spinal brace, and in six weeks he left the hospital.

This second case has some interesting points of difference from the first. The patient was a comparatively young man who, four years ago, had an ordinary nodular goitre removed, but a year later began to have sciatica, which despite treatment slowly increased until it was evident that his cord was compressed. Again, one year after the pains began he had developed a tumour in the chest, and this localisation suggested a primary thyroid growth which was confirmed by biopsy. Intensive irradiation and spinal fixation relieved the symptoms. I think that before long he will have a further recurrence, not only on account of his youth but because the tumour seems very malignant.

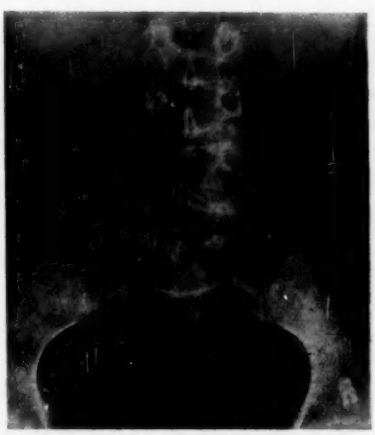

FIG. 4.—Destruction of the body of the 4th lumbar vertebra by metastasising malignant adenoma of the thyroid.

TWO TYPES OF MALIGNANT ADENOMA

Reference to the classification above shows that there are two types of malignant adenoma, which are both extremely rare. These two cases just

described belong to the small-cell type; the large-cell type is even rarer still. Under the microscope their appearance is surprisingly uniform. Langerhans, when he was describing them, said: "When you have seen one field you have seen the lot"; the cells are strikingly large and their protoplasm richly granular.

To look at they are very much like the suprarenal gland and have characteristic small alveoli, appearing as isolated knobs in the middle of the goitre. Getzowe, who is the continental authority on the subject, believes that they arise from tissue rests of the branchial arch, which give rise to tumours having a syncytial character: groups of cells having these characters, but without tumour-formation, are often found in the normal thyroid gland. This view is however disputed by other authorities.

When they grow they form a hard, isolated tumour either in a normal gland or in nodular thyroid. Later they become fixed and infiltrate widely so that they are often mistaken for an inflammatory condition. Their prognosis is relatively good because, if they are removed with the capsule, they are usually cured, especially if they are irradiated afterwards. I myself have not seen a case and reports of them are rare.

In this rare type and also in the ordinary malignant thyroid the onset of malignancy produces quite definite physical signs. The tumour increases in size and produces symptoms of pressure on the trachea and œsophagus, such as dyspnœa and dysphagia. The patient goes rapidly downhill as the tumour increases in size and fixity. Contrast this with the cases I first described, a perfectly ordinary adenoma with a long history, a solitary, equally slow-growing tumour in a bone, the two apparently unconnected until someone explores the bone tumour and finds that histologically it is identical with a colloid goitre.

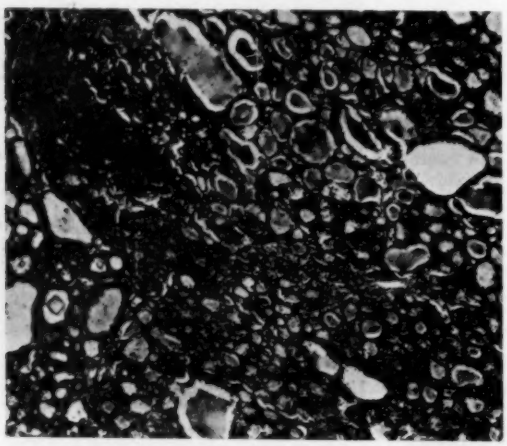

FIG. 5.—A picture of adenomatous and colloid goitre.

If the surgeon is enterprising enough to remove the goitre, not a trace of malignancy is found. What explanation is there for this? If one considers the nodular goitre to be a true adenoma, it must be logically admitted that here we are dealing with a malignant adenoma. But if this view be entertained, it must not be confused with the precancerous conditions which we find in the breast and rectum, described in this country by Cheatle and Dukes. If these adenomata undergo malignant degeneration they themselves have the characteristics of a true carcinoma and their metastases are histologically malignant.

There is however another explanation advanced by Ribbert, who suggests that the entry of goitrous

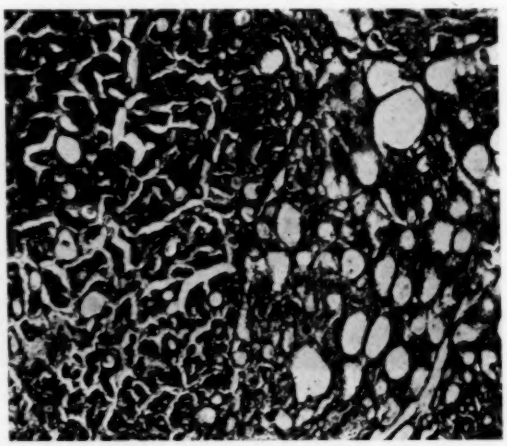

FIG. 6.—The metastasis is the exact copy of the goitre.

tissue into the veins is, so to speak, in the nature of an accident; it is the result of pressure atrophy and not true active infiltration. Hence the rarity of this condition. Graham, discussing thyroid malignancy, believes that invasion of the blood-vessels is the true criterion of malignancy.

Schworer has made an attempt to prove that trauma is mostly the cause of this invasion of the vascular system. He points out that many cases of metastasis appear after an operation for goitre. My second case would perhaps support this idea.

Dunhill has emphasised an important fact in connexion with malignant disease of the thyroid. He has shown that such changes only take place after a long period, much longer than in other types of carcinoma, often 30–40 years. In this type of "malignant adenoma" the history extends from 5–10 years—a marked contrast with the true carcinomata. The metastases often occasion curious mistakes in diagnosis; they may, by their pulsation, resemble an aortic aneurysm, and histological diagnosis may be difficult and inadequate on account of the hæmorrhage caused by excision of a small piece. This however is the only way in which the diagnosis can be made.

Finally I want to make another distinction between these malignant adenomata and true cancer of the thyroid; this concerns their prognosis and reaction to treatment. Von Eiselsberg, a master surgeon with an unrivalled experience, gives it as his opinion that in every case of malignant goitre the metastasis should be irradiated and the gland either removed and irradiated or, if this is impossible, simply irradiated. This, I think, represents the general opinion to-day.

Now with true cancer of the thyroid cures are by no means uncommon. I myself in 1926 was able to show 11 cases free from recurrence after more than six years. In one of these a segment of the trachea had been removed; another patient who had a total thyroidectomy is alive and well eleven years later, but has to take thyroid extract daily. But I do not

think you will find any cases of malignant adenoma which can really be called cured; their lives can be prolonged and their comfort increased by operation and irradiation, but they cannot be cured.

In sarcoma of the thyroid the course is still more rapid. Six to nine months is the limit, and they are unaffected by either operation, irradiation, or a combination of these two; so we must come to the reluctant conclusion that, excluding sarcoma, malignant adenoma is, in spite of its initial response to treatment and its slow course, in fact the most sinister of all thyroid tumours.

SULPHÆMOGLOBINÆMIA AND METHÆMOGLOBINÆMIA FOLLOWING ADMINISTRATION OF *p*-AMINOBENZENESULPHONAMIDE

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A SEVERE toxic effect resulting from one of the *p*-aminobenzenesulphonamide drugs (Prontosil Album) recently came under the observation of one of us (J. P. J. P.).

It has been suggested that poisoning from this substance is associated with administration of sulphates (Colebrook and Kenny 1936, Discombe 1937). Ten cases of cyanosis following administration of *p*-aminobenzenesulphonamide (hereafter referred to as sulphanilamide, for brevity) have been proved to be associated with sulphæmoglobinæmia (Colebrook and Kenny 3, Discombe 6, Frost 1). Of these, 8 received magnesium sulphate by mouth and 1 had a dressing of sodium sulphate. We have investigated this and 19 other cases treated with sulphanilamide with or without magnesium sulphate administration to determine whether sulphates are actually concerned in the toxic effects of these drugs. Of our cases 4 developed sulphæmoglobinæmia, of which 3 had had sulphates before admission. Four patients who received no sulphates developed methæmoglobinæmia. This condition has not previously been recorded after sulphanilamide.

A CASE RECORD

The history of the original case is as follows:

CASE 1.—Female aged 28. Gave birth to a child on Feb. 23rd, 1937, after long rotation from an occipito-posterior position and application of forceps. The puerperium was uneventful from then until March 5th, when she developed pain in the left breast. From March 7th until admission she received 0·3 gramme prontosil album every two hours apart from the night hours—i.e., 2·4 g. per diem, total dosage 9·6 g.—and from March 8th till 11th inclusive she had 1 to 2 teaspoonfuls of magnesium sulphate in the morning. On the 8th the breast was incised and pus evacuated. A dressing was applied, the nature of which is unknown, but which may have contained magnesium sulphate.

The patient was admitted on March 11th as a case of puerperal pyrexia with an alarming degree of cyanosis and apparently moribund. The temperature was 97° F., the pulse-rate 116 per minute, and the respiration-rate 27. Cyanosis was particularly conspicuous in the face, lips, and finger-nails. Pulse volume was very poor. Cardiac dullness was slightly increased to right and left. Heart sounds were pure but of poor quality. For two days after admission there were some fine râles at the base of the right lung and the percussion note over this area was slightly impaired. There was slight tenderness in the lower abdomen. The urine was dark, contained a trace of albumin, pus, and *B. coli*, and reduced Fehling's solution; Rothera's test was positive. No hydrogen sulphide could be detected. There was a deposit of pink urates.

Treatment was begun at once with administration of oxygen through a Haldane's mask but without apparent effect on the cyanosis. A pint of saline and 5 per cent. glucose was given intravenously at 4 P.M. on March 11th, after which the cyanosis diminished and the pulse improved. By 3 A.M. on the 12th the cyanosis was again more obvious and the pulse poor. Half a pint of unusually dark blood was withdrawn from a vein and one pint of citrated blood transfused. This caused a definite diminution in the cyanosis. By 10 A.M the patient's condition had much improved. Potassium citrate, rectal salines, and glucose were given freely and oxygen for 20 minutes every four hours. On examination of the urine, Rothera's test was now negative but there was still a reduction of Fehling's solution. A sample of blood withdrawn from the median basilic vein had a peculiar dusky brown colour.

The administration of oxygen was continued as above until March 15th by which time the cyanosis was much less marked though still distinct. Cyanosis was still apparent clinically though in progressively diminishing degree until the 18th after which it was not possible to say with certainty that it was present. Smears from the breast showed *Staphylococcus aureus*. A cervical smear showed anaerobic streptococci. On March 11th trans-illumination of the lobe of the ear and spectroscopic examination showed a well-marked band in the red part of the spectrum. A sample of venous blood was examined spectroscopically on this date and showed a very well-marked spectrum of sulphæmoglobin. Spectroscopic examination of the blood was made daily until March 30th and then on alternate days until April 26th—i.e., until 46 days after stopping administration of prontosil album—but the characteristic band of sulphæmoglobin in the red part of the spectrum was still faintly visible. The sulphæmoglobin was entirely intracorpuscular. The patient made a perfect recovery.

The findings for the other cases are shown in the accompanying Table. All the patients were females in the puerperium except Case 13 (who was a child with streptococcal interlobar empyema), and were diagnosed as puerperal fever or septic abortion, Cases 6 and 12 being complicated by bilateral mastitis and phlegmasia alba dolens respectively,

Sulphæmoglobinæmia associated with giving sulphur or its compounds has been noted after drugs other than sulphanilamide. Van den Bergh and Revers (1931) recorded sulphæmoglobinæmia in a patient following treatment with Pyridium (phenylazo-α-α^1-diaminopyridine) and showed that this was associated with administration of sulphates. Harrop and Waterfield (1930) found sulphæmoglobinæmia after acetphenetidine (this is discussed more fully below). By means of in-vitro experiments van den Bergh and Revers showed that pyridium accelerates formation of sulphæmoglobin by hydrogen sulphide. This property of catalysing sulphæmoglobin formation is apparently shared by a large variety of substances, most of which are amino compounds or derivatives of amino compounds (van den Bergh and Weiringa 1925). We have repeated and confirmed these in-vitro experiments with pyridium and have made similar experiments with sulphanilamide. From our observations, however, no appreciable acceleration of the formation of sulphæmoglobin could be detected by the simple method used, on the addition of sulphanilamide to the mixture of oxyhæmoglobin and hydrogen sulphide.

EXPERIMENTAL

Spectroscopic examination of the patient's blood was performed by means of a Leitz microspectroscope. The

SUMMARY OF THE FINDINGS

Case	Age.	Dose of mag. sulph. (by mouth)	Dose of sulphanilamide reckoned from day of admission.	Spectrum of blood.	Remarks.
			GROUP 1		
2	26	℥viii during 5 days preceding admission.	2nd day, at 6 A.M., 6 g.; at 10 A.M., 6 g. Total dose 12 g.	2nd day at 1 P.M., SHb present. Detectable till 23rd day.	2nd day cyanosis marked. Detectable till 20th day.
3	27	℥i daily for 4 days preceding admission.	1st day 40 ml. Prontosil soluble (Bayer) intramuscularly. 2nd day 24 g. sulphanilamide by mouth.	3rd day SHb present. Still detectable on 43rd day.	3rd day cyanosis marked. 50 ml. 1 per cent. methylene-blue intravenously failed to relieve cyanosis or sulphæmoglobinæmia. Cyanosis detectable till 17th day.
4	31	Nil.	Variable 33rd–48th days. Total 108 g. in 16 days. Average 6·75 g. per day.	Trace of SHb on 48th day. Detectable till 66th day.	48th day very slight cyanosis following dose of 24 g. sulphanilamide on 46th day. Marked secondary anæmia.
			GROUP 2		
5–11		Nil.	12 g. daily for periods from 6 to 22 days. Total dose 72 to 264 g.	Normal.	No cyanosis.
12	29	℥i just before admission.	12 g. daily 4th–25th days. Total dose 264 g.	,,	,,
13	3	Nil.	3 g. daily for 19 days.	,,	,,
14	32	,,	2nd day 12 g. 3rd day 24 g. 4th day nil. 5th & 6th days 12 g. each. Total dose 60 g.	,,	4th day cyanosed. Much diminished on 5th day. Bronchitis.
15	25	,,	2nd–13th days 12 g. daily. Total 144 g.	,,	13th and 14th days slight cyanosis.
16	31	℥i daily for 3 days before admission.	12 g. daily 2nd–10th days. Total 108 g.	,,	No cyanosis.
			GROUP 3		
17	42	Nil.	1st day 8 g. 2nd day 12 g. 3rd day 36 g. 4th day 24 g. 5th day 6 g. Total 86 g.	5th day MHb present. 6th day normal.	5th day cyanosis marked; mental confusion. 6th day slight cyanosis. 7th day no cyanosis; mentally normal. 5 grains quinine hydrochlor. t.i.d.
18	30	,,	2nd day 24 g. 3rd day nil. 4th day 24 g. Total 48 g.	7th day MHb present. 8th day normal.	3rd day cyanosed. 4th day no cyanosis. 5th–8th days slight cyanosis.
19	30	,,	1st day 4 g. 6th–9th days 12 g. daily. Total 52 g.	10th day MHb present. 11th day normal.	3rd day cyanosed. 4th–8th days no cyanosis. 9th day cyanosis marked. Received hydrochloric acid.
20	24	,,	3rd day 12 g. 4th day 8 g. Total 20 g.	4th day MHb present. 5th day normal.	4th day cyanosed. 5th day no cyanosis. Received hydrochloric acid.

SHb = sulphæmoglobin. MHb = methæmoglobin.

spectra were compared with that of a known solution of methæmoglobin in the comparison tube and the alpha band of the sulphæmoglobin shown to persist after addition of ammonium hydroxide, sodium cyanide, or ammonium sulphide to the blood (Wood Clark and Hurtley 1907, Harrop and Waterfield 1930). Blood from a finger-prick was used, and was laked with a few millilitres of water. The alpha band was seen to lie between 6150 and 6280 Ångström units and could be readily distinguished in position from that of methæmoglobin.

To determine whether sulphanilamide would accelerate sulphæmoglobin formation, 2 ml. oxyhæmoglobin solution were placed in each of two test-tubes. To one tube 5 drops of a solution of sulphanilamide in water, saturated at room temperature, were added and then a few drops of hydrogen sulphide solution to each of the tubes. One of the preparations was then placed on the microscope stage, the other being placed in the comparison tube of the spectroscope. In this way the spectra of the two samples could be watched simultaneously and the development of the spectra of sulphæmoglobin observed. The greater the quantity of H_2S added to the oxyhæmoglobin the more rapidly did the spectrum of sulphæmoglobin appear, but even using minimal quantities of H_2S sulphæmoglobin did not appear to be formed more rapidly in the sample containing sulphanilamide. The action of pyridium was observed similarly, adding a 0·25 per cent. solution of this substance in water in place of sulphanilamide. In this case the spectrum of sulphæmoglobin appeared in a few seconds compared with several minutes for the sample without pyridium.

DISCUSSION

The 20 cases fall into three groups:

Group 1 comprises Cases 1 to 4. These patients all developed sulphæmoglobinæmia. In Cases 1 to 3 magnesium sulphate had been given, there was marked cyanosis (in Case 1 very extreme) and the spectrum of sulphæmoglobin in the blood was pronounced. In Case 4, where no sulphates were given, cyanosis was slight and the sulphæmoglobinæmia only just detectable.

Group 2 comprises Cases 5 to 16. In none of these was any abnormality found on spectroscopic examination of the blood and only in two (Cases 14 and 15) was any cyanosis seen. Of these 12 patients only 2 had received sulphates, and in one of these the administration of sulphates was stopped three days before giving sulphanilamide. Case 16 received sulphates until the day before giving sulphanilamide but failed to develop sulphæmoglobinæmia.

Group 3 comprises Cases 17 to 20. These patients became cyanosed though none had had sulphates. On examination of the blood it was found that methæmoglobin and not sulphæmoglobin was present.

Comparing Groups 1 and 2, it is seen that while the patients in Group 2 received large doses of sulphanilamide for a long period without developing sulphæmoglobinæmia, those in Group 1 (Case 4

excepted) received much smaller total doses and rapidly developed sulphæmoglobinæmia. This was particularly noticeable in Case 2 where only seven hours after giving the first dose of sulphanilamide the patient was markedly cyanosed and the blood contained sulphæmoglobin. A possible explanation of the appearance of sulphæmoglobin in Case 4, although no sulphates had been given, is that intestinal stasis allowed reduction of other sulphur-containing substances in the bowel as is supposed to occur in "enterogenous cyanosis" and that these permitted sulphæmoglobin formation in a similar fashion to exogenous sulphates. This is supported by the findings of Harrop and Waterfield mentioned below.

The formation of methæmoglobin in Cases 17 to 20 was quite unexpected. As is well known, drugs containing the sulphone group $-SO_2-$ such as Sulphonal and Trional, produce methæmoglobinæmia in susceptible persons and probably in anyone provided the dose is sufficiently great. Harrop and Waterfield (1930) have shown that while various aromatic organic compounds produce methæmoglobinæmia, if these substances are given along with sulphur, the result is sulphæmoglobinæmia. Apparently methæmoglobinæmia is the true toxic result of a large dose of sulphanilamide or possibly of quite a moderate dose in an unusually susceptible person. Formation of sulphæmoglobin takes place only when sulphur compounds are available, as happens when they are present in the bowel in unusually large amounts.

We are unable to offer an explanation of the appearance of methæmoglobinæmia in Group 3 where the dosage of sulphanilamide was, on the whole, less than in Group 2. One of the patients had had quinine. Plasmoquine has been responsible for methæmoglobinæmia but we are not aware of any such effect following administration of quinine despite its very wide use in the tropics. Nevertheless, we have tried to eliminate this as a causative factor by giving Case 17 large doses of quinine without simultaneous administration of sulphanilamide. This did not result in a recurrence of the methæmoglobinæmia. Two of the patients received hydrochloric acid for the purpose of aiding absorption (Foulis and Barr 1937). It may be that these patients received a greater *effective* dose. For the other cases, we are forced to that confession of ignorance, "idiosyncrasy on the part of the patient."

The relative persistence of sulphæmoglobinæmia and methæmoglobinæmia is of some interest. While sulphæmoglobin could be detected for more than six weeks after stopping administration of sulphanilamide, methæmoglobin could not be detected after 24 hours. This corresponded approximately with the cyanosis. When cyanosis was due to methæmoglobin it disappeared very rapidly while that due to sulphæmoglobin was much more persistent. These findings correspond with those of Waterfield (1928) in a patient in whom sulphæmoglobin and methæmoglobin were found alternately. Waterfield noticed that attacks of cyanosis associated with methæmoglobin were transient, the patient's colour rapidly becoming normal in the intervals; with sulphæmoglobin the cyanosis was persistent.

The persistence of sulphæmoglobin is the more surprising on consideration of its mode of formation. Methæmoglobin is the result of oxidation of the iron-containing part of hæmoglobin but sulphæmoglobin is believed to be an addition product. Carbon monoxide hæmoglobin is also an addition compound of hæmoglobin and is decomposed by oxygen, so that in poisoning by carbon monoxide a few hours suffices to remove it from the blood (Sollmann's Pharmacology, 5th ed., p. 752). The persistence of sulphæmoglobin in these patients implies that this substance cannot be so decomposed and that the H_2S cannot be excreted from the lungs. Probably the sulphæmoglobin must be eliminated by the liver. Since methæmoglobin disappears so much more rapidly, it is unlikely that it is removed in similar fashion. Owing to its nature, removal could scarcely occur in the lungs and it would seem not improbable that it can be reduced again to hæmoglobin. If, however, this is correct, it is difficult to understand why oxygen should appear to relieve cyanosis in patients who have methæmoglobinæmia.

The detection of sulphæmoglobin in the blood of the affected patients long after the disappearance of clinical signs of cyanosis points to the spectroscope as being a much more delicate means of detecting poisoning from this group of drugs than the clinical observation of cyanosis.

CLINICAL AND THERAPEUTIC NOTES

In 3 of the patients (Nos. 1 to 3) the cyanosis was alarming; but all recovered. The impression gained from these cases is that although the cyanosis appears serious, danger to life is not great. Of the cases already reported which became cyanosed after the use of sulphanilamide or its derivatives, only one (Frost 1937) has ended fatally. Though magnesium sulphate was not given to the patient during administration of the drug in Frost's case, it is not stated whether the patient had had sulphates before coming under observation.

Further symptoms noted in our cases were nausea, headache, and discomfort in the upper abdomen. In Case 17, where there was methæmoglobinæmia, mental confusion was a conspicuous symptom but it disappeared on stopping administration of sulphanilamide. Mental symptoms were a marked feature of Waterfield's case.

The treatment for alleviation of the symptoms depends on whether sulphæmoglobinæmia or methæmoglobinæmia is present. In the former case oxygen has little effect (as might be expected), but intravenous administration of saline and glucose relieves the cyanosis, temporarily at least. If the patient's life appears to be in danger transfusion is indicated. If there is methæmoglobinæmia oxygen appears to be of value. The cyanosis accompanying methæmoglobinæmia disappears rapidly.

Before giving sulphanilamide a careful inquiry should be made to find whether magnesium sulphate or preparations containing it have been used, owing to the common use of this substance to stop lactation.

SUMMARY

1. Administration of magnesium sulphate simultaneously with, or within two or three days preceding, administration of sulphanilamide gives rise, in most persons, to sulphæmoglobinæmia. The formation of sulphæmoglobin takes place very rapidly even after small doses of the drug.

2. In the absence of sulphates large doses of the drug are well tolerated, but in a considerable proportion of persons doses of 12 to 24 grammes per diem result in methæmoglobinæmia. Some patients may have an increased susceptibility to the drug.

3. The removal of sulphæmoglobin from the blood is much slower than removal of methæmoglobin. The former has been detected six weeks after administration of sulphanilamide ceased. The latter disappears in approximately 24 hours.

4. Spectroscopic examination of the blood is a more delicate means of detecting sulphæmoglobinæmia than clinical observation of cyanosis.

5. Oxygen is of little value in treatment of severe cases of sulphæmoglobinæmia. If the patient's life is in danger blood transfusion is indicated. In methæmoglobinæmia oxygen appears to be of value.

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A CONTRIBUTION TO THE PATHOLOGY OF THE RHEUMATOID TYPE OF ARTHRITIS AND OF RHEUMATIC FEVER*

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ALTHOUGH, from time to time, contributions have been made to our knowledge of the pathology of the rheumatoid type of arthritis of unknown ætiology (*synonyms:* rheumatoid, chronic infective, atrophic, or proliferative arthritis), most of these have dealt with the later stages. The disease is rarely fatal per se and opportunities for post-mortem examination in the acute or earlier periods are therefore rarely provided. Post-mortem examination of patients who have succumbed to rheumatic fever is more often possible, but it is often observed that the pathology of the heart is studied in detail and that the joints receive scant consideration. In the case of the rheumatoid type of arthritis, the classical pathological descriptions of Nichols and Richardson (1910) and of Strangeways (1918), and others, detailed as these are, are based to a large extent upon examination of material from the later stages of the disease. The pathological changes in such are complex since secondary degenerative or osteo-arthritic changes are often superimposed, a theory of the cause of which will be put forward in this paper.

The work of Allison and Ghormley (1931) was based largely upon material obtained at operation upon joints affected with the rheumatoid and other types of arthritis at a somewhat earlier stage, and merits careful study. They drew particular attention to the "focal collections of lymphocytes" often observed in this disease and previously described by Hoffa and Wollenberg (1908) and by myself (1923), and claimed that these collections are a specific diagnostic feature.

A series of important papers has recently appeared from Klinge and Grzimek (1932). These authors are among those who maintain that rheumatic fever and arthritis of the rheumatoid and osteo-arthritic types are different forms of the same underlying pathological process. It is my view that a principal cause of the confusion that exists concerning rheumatic diseases is that we have neglected the Hunterian principle of basing our treatment upon a firm foundation of anatomical, physiological, and pathological knowledge. The present work is a sequel to former work on the pathology of the osteo-arthritic and rheumatoid types of arthritis and upon joint physiology.

SOURCE OF MATERIAL AND SCOPE OF INVESTIGATION

My investigations have been carried out upon synovial tissues removed at operations during the last fifteen years upon patients suffering from the rheumatoid type of arthritis. These operations include the ordinary excisions and synovectomies in cases of long standing and, in addition, the newer method of lavage of the affected joints with normal saline or with antiseptic solutions combined with removal of portions of synovial membrane. The pathological changes in the articular cartilage and bone have also been studied, but as operative and post-mortem material of this nature has only been obtained from the later stages which have been previously described by myself (1929) and others, these changes will not be described in this paper.

Arthrotomy and lavage is a valuable means of treatment in carefully selected earlier cases of the disease which have proved resistant to the usual medical and physical treatment, when the brunt of the disease falls mainly on one or both knees and when the articular surfaces are uninvolved or present early changes. It is of great value also in providing an opportunity for investigation of the joint tissues and fluids. It is a procedure which presents considerable advantages over mere aspiration, since the rheumatoid joint, even at a comparatively early stage, contains a variable amount of necrotic material due to fibrinoid degeneration of the synovial membrane and which it is impossible to remove through a needle or trocar, even when of large calibre. Many joints which give the sensation of fluctuation and which on clinical examination appear to be full of fluid, yield on aspiration but a moderate quantity, owing to the large amount of necrotic material present. It is for this reason that the operating arthroscope has proved disappointing in my experience. Occasionally, if conditions are favourable, arthroscopy enables a good view of the anterior compartment of the knee-joint to be obtained, but it possesses no special advantage over routine clinical and X ray examination. The main drawback to the use of the

FIG. 1 (Case 1).—Rheumatoid type of arthritis. Perivascular collections of cells in deeper layers of synovial membranes. (× 85.)

* Based on a lecture delivered at the St. John Clinic on Nov. 13th, 1936.

arthroscope lies in the fact that the masses of necrotic material to which reference has been made obstruct the view and cannot be completely removed through the cannula of the instrument, even after frequent irrigation. In many patients, the symptoms have completely disappeared after arthrotomy and lavage and they have remained cured for periods as long as 12 and 14 years, and, in the majority, there has been a most gratifying amelioration of symptoms. This method of surgical treatment will be described in detail elsewhere.

Bacteriological examination.—The research into the ætiology of the rheumatoid type is being carried out by Dr. Hardy Eagles of the Lister Institute. The purpose of this combined research has been to correlate the pathological findings with examination of joint fluids and synovial membrane, removed at operation, for evidence of a possible virus ætiology, and to investigate the possibility of a pathological and ætiological relationship between acute rheumatic fever and the rheumatoid type of arthritis. After suitable manipulation of the specimens and high-speed centrifugation, Dr. Eagles has obtained suspensions which are indistinguishable from elementary bodies demonstrable in similar suspensions

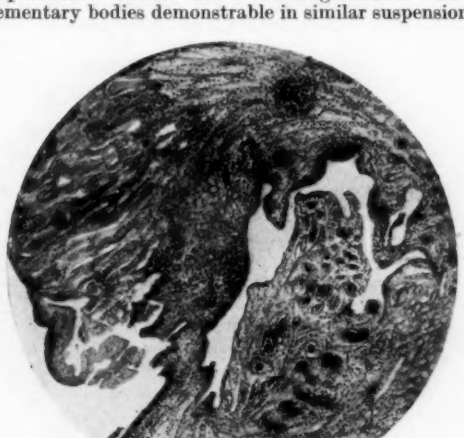

FIG. 2 (Case 2).—Rheumatoid type of arthritis. Section of Synovial membrane. (× 70.) Showing large area of fibrinoid degeneration above and to the left, and several focal collections of cells in the deeper layers.

from recognised virus diseases. Similar bodies have been found in the pericardial and pleural exudates and joint fluids from rheumatic fever. These suspensions have been examined for agglutination with rheumatic sera using the hanging-drop technique. Tests have been carried out with material from rheumatism of the rheumatoid type and rheumatic fever. This aspect of the work will be described by Dr. Eagles in a forthcoming publication.

It is proposed in this preliminary paper to describe shortly the *pathological histology* of the rheumatoid type of arthritis of non-specific or unknown ætiology and to compare the changes with those seen in the joints in rheumatic fever, a few representative cases only having been selected for description.

Some of the rheumatoid group were private patients but the majority were patients at the L.C.C. Arthritic Unit, St. Stephen's Hospital, and the histological examination of the joint tissues removed from the latter was carried out at the Central Histological Laboratory of the London County Council. Prof. H. M. Turnbull and Dr. W. G. Barnard kindly provided material from autopsies for the investigation of the synovial changes in the arthritis occurring in the course of rheumatic fever.

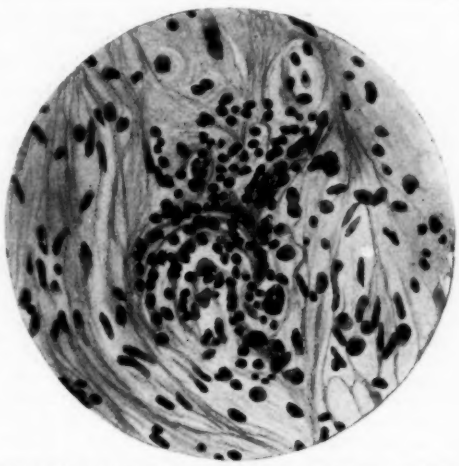

FIG. 3 (Case 2).—Rheumatoid type of arthritis. Section of synovial membrane. (× 210.) Small focal collection of cells under higher power showing giant cells of Aschoff type.

EARLY RHEUMATOID ARTHRITIS

My first case is one of the rheumatoid type of arthritis, of unknown ætiology.

For two years, the patient, an unmarried woman aged 38, had complained of pain and stiffness of both knees of moderate severity. She had also experienced occasional pain and stiffness of the neck. For two weeks before operation she had complained of severe pain, stiffness, and swelling of the right knee and difficulty in walking. No toxic focus could be discovered.

The right knee had a synovial effusion, with painful limitation of flexion, increased temperature over the joint and tenderness over the deep fibres of the internal lateral ligament. Radiographically the knees showed no osseous changes.

Operation.—Small incision on the inner aspect of the joint. Smears of synovial fluid taken. Small portions of the infrapatellar pad of fat were removed and the joint washed out with normal saline. No changes seen in the articular surfaces beyond very early pannus on the internal femoral condyle.

The sections of the synovial membrane from this case show proliferation of the synovial villi and of the specialised synovial cells lining the villi. There is degeneration of the superficial cells at one or two spots. In the deeper layers of the synovial membrane are several small focal collections of cells which are in the main perivascular (Fig. 1.) The cells constituting the collections are lymphocytes and histiocytes, and, occasionally, among these cells, large histiocytes, somewhat triangular in shape and resembling the giant cells seen in the Aschoff nodule of rheumatic fever, can be recognised. In the region of these collections, areas of focal hyaline degeneration of the connective tissue can occasionally be seen which often involve the adventitia of the blood-vessels. Proliferation of the vascular endothelium is a prominent feature, and in some cases the arteriole or capillary is completely blocked by endothelial proliferation. An important feature is the complete absence of the polymorphonuclear cells which are a feature in the forms of arthritis associated with the presence in the joint of pyogenic organisms. The bacteriological examination of the joint fluid and tissues was negative.

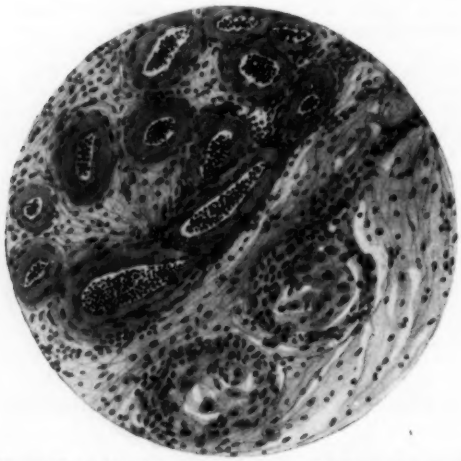

FIG. 4 (Case 3).—Rheumatic fever. Section of synovial membrane. (× 120.) Above and to the left are several blood-vessels showing fibrinoid degeneration of the subintimal layer. Below and to the right are two Aschoff bodies with typical giant cells.

A LATER ACTIVE STAGE

The pathological histology of the rheumatoid type at a later, but still active, stage will now be described and comparison made with a case of rheumatic fever which shows many similar pathological features. In particular, attention is drawn to a peculiar form of degeneration of the connective tissues known as "fibrinoid" which has been observed in the lesions of rheumatic fever for many years, although its occurrence in the rheumatoid type has only been recently described by Klinge and Grzimek (1932). Perivascular collections of cells are seen, as before, but, in the cases to be described, giant-cells of the Aschoff type are a prominent feature, not only in the case of rheumatic fever, but in the rheumatoid type of arthritis—a phenomenon which does not appear to have been described before in the latter disease.

In my second case of the rheumatoid type of arthritis the patient was a married woman aged 62.

Nine months before operation, painful swelling in the right ankle suddenly developed, followed two weeks later by similar symptoms in the right knee. She received electrical treatment for several weeks and the joints improved; but soon the left knee, the right wrist, and the metacarpophalangeal joints of the right index and second fingers became involved. All joints, except the left knee, responded to medical and physical treatment. No toxic focus could be discovered.

Operation.—Long parapatellar incision on inner side of left knee. The synovial membrane showed hypertrophy of the synovial fringes and was œdematous in places. Much fibrinoid material was present, not only in shreds in process of exfoliation from the synovial membrane, but free in the joint. Early pannus extended for a short distance over the lateral portions of the femoral condyles, but the articular surfaces were otherwise uninvolved. Synovectomy was performed and the joint irrigated with Dakin's solution. Bacteriological investigation of synovial tissues and fluid was negative. The infrapatellar pad of fat was chosen for microscopical examination

Several large areas of fibrinoid degeneration (Fig. 2) not only of the superficial area, but lying more deeply were clearly shown. At this stage of the disease it is usually to be noted that the synovial membrane is diffusely infiltrated with chronic inflammatory cells, principally lymphocytes, plasma cells, and epithelioid histiocytes, in addition to the typical perivascular collections of cells previously described. In this type of case, giant-cells of the Aschoff type can usually be observed (Fig. 3), if the smaller perivascular collections are examined, rather than the areas diffusely infiltrated with chronic inflammatory cells.

RHEUMATIC FEVER

The third illustrative case is one of rheumatic fever in a girl aged 9.

She was admitted to St. Charles' Hospital a fortnight after the onset of illness with temperature and pain in right elbow which, however, ceased on admission. Pain and swelling of both ankles commenced three days before admission and the ankle-joints were hot, swollen, and painful. The temperature on admission was 99·8, the pulse-rate 144, and respirations 26. The heart was not enlarged, but a mid-diastolic mitral murmur was present.

Two weeks later, the patient became gravely ill with extreme restlessness and incontinence. The heart was now enlarged with canter rhythm and loud apical systolic bruit. The patient gradually sank and died. The post-mortem examination by Dr. Barnard revealed œdema of medulla, pons, mid-brain, basal ganglia and parietal lobe of brain, rheumatic synovitis of sternoclavicular articulation, partially organised fibrinous pericarditis with Aschoff

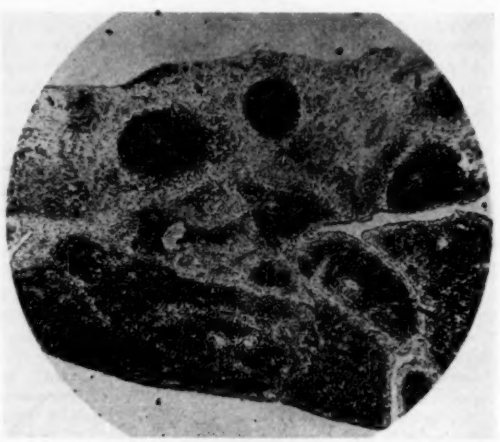

FIG. 5 (Case 5).—Rheumatoid type of arthritis. Section of synovial membrane. (× 112.) Showing several lymph-adenoid nodules some of which have a clear central area.

nodes in myocardium, rheumatic mitral endocarditis, œdema of lung with fibrinous pleurisy and congestion of liver and kidneys.

Sections of the synovial membrane of the sterno-clavicular joint (Fig. 4) reveal many of the specific histological features of acute rheumatism that have so often been described in connexion with the heart. Fibrinoid degeneration is a prominent feature (*a*) of certain of the synovial villi and of the surface of the synovial membrane, (*b*) scattered diffusely throughout the synovial membrane, and (*c*) in connexion with the inner coats of many of the blood-vessels so that the wall appears to be thickened. Many of the capillaries are blocked by proliferation of the endothelial layer. Around many of the blood-vessels are collections of cells in connexion with the adventitia. These cells are mainly large and small lymphocytes and epithelioid histiocytes, with occasional plasma and mast cells. Among the histiocytes are some giant-cells which have two, three, or even more nuclei. These collections of

cells resemble, therefore, the Aschoff bodies seen in the heart.

FIBRINOID DEGENERATION

Fibrinoid degeneration was apparently first described by Neumann in 1880 and again in 1896. In the latter paper, he states that it is a substance which at first sight has the appearance of fibrin but which is in reality a form of degeneration of the connective tissue. It is usually stained a diffuse blue by the Weigert-Gram stain and is, like fibrin, stained a deep blue by Mallory's phosphotungstic acid hæmatoxylin and red by Mallory's acid-fuchsin aniline-blue. Klinge and Grzimek (1932) state that it gives the fibrin staining reactions for the most part.

With Klinge, I maintain that the fibrinoid degeneration of the synovial membrane, here described, is an important feature of the rheumatoid type of arthritis of so-called unknown ætiology and that this form of degeneration is not therefore confined to acute rheumatism. In the latter condition, it is seen not only in the synovial membrane but in the heart and in other regions affected by the disease. The degeneration affects principally the collagenous connective-tissue bundles and forms a striking histological picture. Dawson (1933) states that with Masson's trichrome stain it presents a fibrillar structure, which stains a brilliant red, in striking contrast to the vivid green of the normal collagen. My investigations show that this form of degeneration is, therefore, a characteristic feature of the rheumatoid type of arthritis of unknown ætiology, except in the very early and in the more chronic stages.

ŒDEMA OF THE SYNOVIAL MEMBRANE IN RHEUMATOID ARTHRITIS

Another interesting and important feature which appears to have hitherto escaped general notice is that at operation the synovial membrane can often be seen to be œdematous. This is well shown in the following case (No. 4), which presents also other interesting features.

The patient, a married woman aged 60, had complained of pain and swelling in the right knee for ten years, of gradual onset. For the last three years, she has only been able to walk with two sticks and has gradually become worse. For eleven years, both wrists and hands have been painful, stiff, and swollen. Has had eight children, with no miscarriages; one bad confinement with instruments, and leucorrhœa for several years. Climacteric at age of 48. Bowels always constipated. All teeth removed eight years ago for severe pyorrhœa. Tonsils normal.

Operation.—Synovial membrane œdematous and general hypertrophy of synovial fringes. Synovectomy followed by irrigation of the joint with Dakin's solution. Some turbid free fluid present in the joint. Considerable destruction of the articular cartilage of the patella and condyles of the femur present with extensive pannus. The bacteriological investigation of the synovial tissues and fluid was negative.

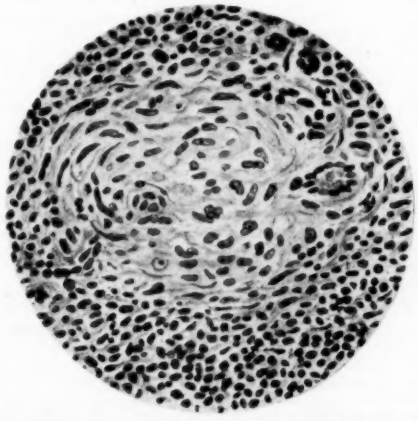

FIG. 6 (Case 5).—Rheumatoid type of arthritis. Section of synovial membrane to show structure of central zone of a lymphadenoid nodule seen in Fig. 5. (× 215.)

Sections of the synovial membrane in this case show the chronic inflammatory infiltration with perivascular collection of cells and areas of fibrinoid degeneration to which attention has been already drawn. The sections of the synovial membrane show, in addition, the œdema which is often such a prominent feature in these cases. Near the surface of the synovial membrane are a large number of clear areas varying in size. These areas are surrounded by fibrinoid degeneration of the connective tissue and interspersed in this area are large numbers of giant-cells which themselves often occupy spaces. These giant-cells vary in size; some being of the typical Aschoff variety and having two or three nuclei, while others have many nuclei and resemble foreign-body giant-cells. The giant-cells appear to be destroying the fibrinoid material, and many of the smaller spaces appear to be formed in this manner.

RHEUMATOID ARTHRITIS IN ITS LATER STAGES

The changes in the synovial membrane in more chronic cases of the rheumatoid type of arthritis of unknown ætiology constitute a very striking and, in my opinion, specific appearance and will now be described. They are illustrated in the following case (No. 5):—

Married woman aged 54. Onset of rheumatoid type of arthritis in right knee 2½ years ago during a time of mental and physical stress. No obvious toxic focus present, but the majority of her teeth were removed shortly after the onset of the arthritis owing to pyorrhœa. Examination showed chronic arthritis of rheumatoid type of right knee—far advanced. Practically a flail joint and any attempt to flex the knee is accompanied by a sudden lateral displacement of a tibia with a painful jerk. Triple displacement of the tibia is present and there is 1½ in. wasting of the right thigh. Wassermann test negative. Arthritis of the rheumatoid type was also present in the metacarpophalangeal joints of both thumbs and in the proximal interphalangeal joints of both middle fingers. Owing to the gross destructive changes the joint was excised.

The sections of the synovial membrane from this case (Figs. 5 and 6) demonstrate clearly the lymph-adenoid nodules often with a clear centre that are such a conspicuous feature of this type of arthritis. The nodules are formed as follows: in the first place there is a perivascular collection of lymphocytes, histiocytes, and plasma cells with an occasional Aschoff giant-cell as has been previously described. This is followed by proliferation of the vascular endothelium so that the clearer central area contains many cells of endothelial type interspersed with strands of fibrin (Fig. 6). A close connexion of these "lymphadenoid" nodules with the blood-vessels is clear on careful examination and seems to disprove the view of Allison and Ghormley that these nodules are not primarily perivascular. It has been suggested that the appearance of these nodules lends support to the tuberculous theory of origin of this form of arthritis. I cannot subscribe to this view as these

nodules never contain the characteristic tuberculous giant-cells and caseation is absent. The bacteriological investigation of the synovial tissues and fluid was negative.

In the later stages of the rheumatoid type, the synovial membrane and villi become fibrotic. Many of the blood-vessels are blocked, and, in some cases, there is a striking development of connective-tissue around the vessels in the form of concentric rings (pericapillaritis diffusa of Shattock and Fisher (Fisher 1922–23). As similar changes can be seen in the subarticular blood-vessels, it is clear that the nutrition of the articular cartilage and of the whole joint must be seriously impaired and this interference with the nutrition of the joint is probably the cause of the secondary osteo-arthritic changes that so often supervene in the later stages of the rheumatoid type of arthritis. A large number of the specimens in the Strangeways collection at the Royal College of Surgeons of England demonstrate this fact very clearly.

There is evidence also that in some cases the arthritis of rheumatic fever, instead of disappearing, persists in a form indistinguishable from the rheumatoid type of arthritis and secondary osteo-arthritic changes may eventually supervene.

COMMENTARY

The results obtained in the course of this investigation show that the pathological histology of the synovial tissues of uncomplicated forms of the rheumatoid type of arthritis of so-called unknown ætiology and of acute rheumatism presents a similar and specific picture. The similarity of the pathological reactions in the synovial membrane in these clinical conditions supports the theory that they are manifestations of the same fundamental pathological process. Charcot (1881) wrote in this connexion: "There are not two fundamentally distinct diseases but only two manifestations of one and the same diathetic state," and Hawthorne (1900) considered that the presence of similar subcutaneous nodules in the two diseases showed that they were intimately related. Of recent years, these subcutaneous nodules have been subjected to close pathological study by Coates and Coombs (1926) Freund (1928), Dawson (1933), Clawson and Wetherby (1932) and others, and it has been established that the pathological histology is identical in the two diseases. McEwan (1933) has studied by means of supravital stains the cells of the subcutaneous nodules of both rheumatic fever and rheumatoid arthritis and claims that the staining reactions of the cells in the two conditions are similar and differ from the cells in other granulomatous conditions such as syphilis and tuberculosis. He has found the same specific staining reactions in the cells of the synovial membrane in rheumatoid arthritis.

It is interesting to observe that the changes that have been described in the synovial membrane, both in acute rheumatism and in the rheumatoid type of arthritis in their early stages show a strong resemblance to the foci in the interstitial tissue of the myocardium in rheumatic fever first described by Poynton (1899) but further elaborated by Aschoff (1906), Carey Coombs (1911), and others. In this investigation, the pathological picture, the negative results of bacteriological examination of the joint tissues and fluid in uncomplicated cases, together with the absence of polymorphonuclear reaction in the synovial tissues—so characteristic of other forms of arthritis associated with the presence of pyogenic organisms—is not in agreement with the hypothesis that the rheumatoid type of unknown ætiology is due to the actual presence in the joint itself of streptococci or other pyogenic organisms. It is a significant fact also that in a few cases in which streptococci were isolated from the synovial membrane, typical pyogenic membrane was observed, intensely infiltrated with polymorphonuclear cells, and it is important to note that definite toxic foci were present in these patients in contradistinction to the previous group. It would appear that in these cases secondary infection has been superimposed upon some other factor, the nature of which is still undecided. I am unable therefore, although some of my work is confirmatory of that of Klinge, to subscribe to his view that in uncomplicated forms of rheumatic disease the tissue changes are similar to those in septic diseases with a demonstrable exciting cause.

Are the peculiar and apparently specific histological changes that occur in uncomplicated rheumatic disease allergic phenomena associated with a focus of streptococcal infection? In this connexion it may be noted that Klinge has described similar changes in serum-sickness. On the other hand, are they due to some other factor acting either alone or in conjunction with the streptococcus? The results of Schlesinger, Signy, and Amies (1935) tend to show that a virus might play some part in the ætiology of rheumatic fever. It would, however, be unwise to disregard the rôle of streptococci in rheumatic infection in view of accumulated evidence, and it is probable that both virus and streptococci are concerned in the ætiology. My research-associate, Dr. G. Hardy Eagles, will deal with these problems in a forthcoming paper.

In conclusion, I wish to express my indebtedness to Sir Frederick Menzies for kindly placing the resources of the London County Council hospital services at my disposal; to the Medical Research Council for financial assistance towards the expenses of the research; to Dr. D. S. Sandiland, medical superintendent of St. Stephen's Hospital, Prof. H. M. Turnbull, and Dr. W. G. Barnard, chief histologist to the London County Council, for much help; to Sir Leonard Hill and his other colleagues at the St. John Clinic and at the L.C.C. Arthritic Unit for their kind assistance.

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ACQUIRED HÆMOLYTIC JAUNDICE

WITH UNUSUAL FEATURES

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THE following case, observed continuously for nine months, is recorded because unusual features in the blood picture made the diagnosis at first uncertain, and because few similar cases have been described with autopsy findings.

CLINICAL RECORD

The patient, a widow aged 70, was admitted to the Royal Hospital, Sheffield, on Nov. 15th, 1935, with a history of breathlessness, palpitation, and pain in the legs and back for the past year. She also complained of a continuous nagging pain in the upper abdomen, unrelated to food. About six months previously she had found that she was becoming pale, and since then had been unable to do the housework. During the past three months she had had weekly injections of Campolon, and had improved slightly, the pain becoming less severe. She had always been pale, but could remember no previous attack of anæmia; nor was there any family history of it. She was slightly deaf.

Condition on admission.—She was a well-built, well-nourished woman, with definite jaundice of the skin and sclera. She looked pale and ill and was very weak. Temperature, 97·2° F.; pulse-rate, 84; respirations, 20. Tongue clean and moist, not atrophic. Mouth and fauces normal. Nails striated and brittle. Liver not enlarged. On percussion the spleen was found to be slightly enlarged, but it was not palpable. The muscles over the left upper abdomen were somewhat rigid, and there was slight tenderness there. No enlargement of glands could be detected, and the heart, lungs, and nervous system were normal.

Laboratory investigations.—Blood examination showed:

Red cells	1,190,000	Polymorphs	76%
White cells	10,400	Lymphocytes	21·5%
Hæmoglobin	26%	Mononuclears	2%
Colour-index	1·1	Eosinophils	0·5%
Halometer reading	8·0μ		
Reticulocytes	67%		
Fragility range	0·44–0·36%		

Films showed macro- and micro-cytosis. Almost two-thirds of the cells showed polychromasia, and nucleated red cells were numerous. The van den Bergh reaction was indirect positive, and the Wassermann reaction negative.

Several stools were examined and all were of normal consistence and failed to show blood by the benzidine test. The urine was dark brown and acid. The stomach juice was greatly reduced in quantity—not more than 50–60 c.cm. being obtainable in three hours after histamine stimulation in the fasting state—but normal in composition. Radiography of the long bones showed nothing unusual. A lævulose-tolerance test on Feb. 7th, 1936, showed an initial hypoglycæmia followed by a biphasic response, resembling that found in von Gierke's disease, but well within normal limits. It suggested that the glycogen had been mobilised with some difficulty. The icterus index on Jan. 8th, 1936, was 10 units.

Clinical course.—The blood picture remained much the same for a month but the patient then began to improve. Campolon 2 c.cm. daily was given from Dec. 18th, 1935, onwards, being supplemented by ferrous sulphate grains 3 t.d.s. until Feb. 9th when Marmite alone was administered. The improvement continued until finally she was discharged on March 22nd, 1936, with a hæmoglobin figure of 54 per cent. and reticulocytes 8 per cent. Campolon was resumed before her discharge, and she continued to receive campolon, marmite, and ferrous sulphate. She attended hospital once a fortnight for blood examinations, the first made on March 31st showing a maximum of 60 per cent. hæmoglobin and reticulocytes 8 per cent. She was not seen after this until April 27th, when the hæmoglobin had fallen to 56 per cent. and reticulocytes were 10 per cent. She said that she had been confined to bed by a recurrence of the pains in her legs and back. The fall in hæmoglobin continued with a progressive rise in reticulocytes, and she was advised to return to hospital but refused. On July 31st she was readmitted with the following blood picture:—

Red cells	1,020,000	Polymorphs	92%
White cells	38,000	Lymphocytes	5%
Hb.	25%	Mononuclears	3%
C.I.	1·2		
Reticulocytes	81%		

Price-Jones curve gave a mean corpuscular diameter of 7·155 with $v = 18·113\%$ and $\sigma = 1·298$. The blood film showed polychromasia, macrocytes, microcytes, and numerous normoblasts, many with moniliform distortion of the nucleus. Polymorphonuclears included many banded forms. No primitive cells. Indirect van den Bergh, 2 units.

She was again very pale and jaundiced and visibly distressed. Her mental condition was confused and she was at times comatose. The pulse-rate was 90–100 and respirations 30. Temperature 99°. Blood transfusions of 250 and 320 c.cm. were given and she improved considerably, her mental symptoms and respiratory distress disappearing. A further transfusion four days later was followed by an attack of dyspnœa, but she recovered and remained well for six days, after which she again became extremely ill with a hæmoglobin value of 30 per cent. A further 250 c.cm. of blood was given but she died next day.

POST-MORTEM FINDINGS

Adipose tissue in fair amount everywhere. Heart enlarged (14 oz.). Musculature pale, but no fatty striation. Aorta atheromatous with severe ulceration in abdominal portion. Lungs normal, except for some œdema of the bases. Stomach and intestines normal. Liver enlarged (3 lb.); on section it had a mottled appearance due to areas of congestion. Microscopically the centres of the lobules were congested, with hæmofuchsin in the central liver cells, and iron pigment mainly at the periphery. Biliary tract normal.

Kidneys.—The left kidney was almost completely replaced by a large hydronephrotic cyst. It was apparently of the floating type. The right showed a mild chronic nephritis, with an iron-containing exudate (hæmoglobin) in the tubules, and iron in the cells of the convoluted tubules. In the remaining substance of the left kidney iron was also present. The spleen was enlarged (15 oz.) and had numerous fibrous adhesions. The cut surface had a rich dark red pulp; trabeculæ and Malpighian corpuscles showed distinctly. A single small infarct was present on the left border. Microscopically the pulp was engorged with red cells, the venous capillaries being moderately distended or collapsed. There was little iron pigment and only a moderate amount of hæmofuchsin; no fibrosis or increase of the reticulum. Erythrophagocytosis common. Cells of the myeloid series not numerous. Malpighian bodies small. Many normoblasts and a few megaloblasts seen. No Gandy-Gamna nodules.

Lymphatic system.—In the glands examined, which were mainly thoracic and abdominal, iron was found in moderate quantity in large macrophages lying in the sinuses. Considering the degree of blood destruction the quantity was not very great.

Marrow.—Rich red bone-marrow in the shafts of the humerus and femur but not in the tibia. Centre of the shafts occupied apparently by solid mass of dark red blood, fading at the periphery into a more organised and less darkly stained portion. On section the picture was very similar in both bones. Adipose tissue was almost absent, being replaced by large collections of erythrocytes lying in what appeared to be deeply congested capillaries and sinusoids. Here and there among the erythrocytes, especially at the edge of the marrow, were small active erythropoietic foci, or less often groups of myeloblasts. The walls of the sinusoids containing the erythrocytes were not clearly defined, though with azan staining reticular fibrils with cells could be determined, apparently dividing the erythrocytes into groups. Megakaryocytes were numerous and evenly distributed. There were few nucleated red cells in these collections of erythrocytes, whereas in other organs such as the liver and kidney nucleated red cells were usually conspicuous inside the vessels. A similar lack of nucleated red cells was noted in the congested sinusoids of the spleen. It seems that some mechanism is at work which separates them out.

Ribs, vertebræ, and sternum showed similar pictures, except that the erythrocytes were fewer in proportion to the nucleated elements, and that they tended to be within well-defined sinusoids and capillaries. Hæmopoiesis was very active in these bones. Erythrophagocytes were fairly common. Megakaryocytes were numerous and well distributed.

No hæmopoietic foci were found outside the bones. The *thyroid* showed colloid changes with degeneration and calcification of the lower portion of the right lobe.

DISCUSSION

Fig. 1 shows the hæmoglobin and erythrocyte and reticulocyte counts in the nine months before death. A fall in the reticulocytes was reflected in a rise in the first two, and vice versa. Since on the scale 5,000,000 red cells per c.mm. is equivalent to 100 per cent. hæmoglobin, a rise in the colour-index is indicated by the red blood-cell curve lying below the hæmoglobin curve. Mean cell diameters measured by the method of Price-Jones (1933) were on Dec. 16th 7·25 μ, on Feb. 28th 7·023 μ, on March 31st 7·075 μ, and on July 31st 7·155 μ. The curves on Feb. 28th (when reticulocytes were only 4·5 per cent.) and on July 31st (when the patient was severely ill and reticulocytes were 81 per cent.) are compared in Fig. 2. The curve made during the acute hæmolytic crisis is remarkable for the greatly increased variability, due mainly to the large numbers of macrocytes and microcytes. In the recovery stage these cells disappeared and the curve lay almost within normal limits. In form the curves are essentially similar to those given by Hawksley (1936), though in none of his cases was there any megalocytosis. The halometer reading made during the first crisis was apparently incorrect. The large numbers of megalocytes seem to be equally balanced by the large numbers of microcytes and by the Price-Jones method the mean diameter is almost normal. Fragility tests

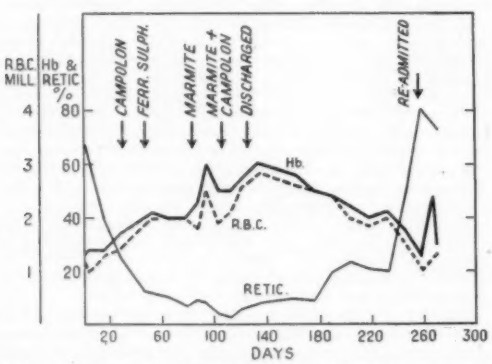

FIG. 1.—Graphs showing the result of blood investigations over the observation period.

showed little variation from normal. The highest result 0·475 per cent. to 0·300 per cent. was obtained by the method of Beebe and Hanley (1936), and is little above the normal standard they give. Unfortunately the mean cell volume measurements made were inaccurate.

The picture of a severe hæmolytic anæmia with raised colour-index, high reticulocyte count, and normal or almost normal fragility, suggested acholuric jaundice. A similar case described by Reynolds (1930) had a colour-index of 1·3, a reticulocyte count of 95 per cent., and fragility of 0·40 per cent. to 0·32 per cent. This was cured by splenectomy, making the diagnosis of acholuric jaundice almost certain. In the terminal attack especially, in which the temperature was usually 97·0°–99·8° and prostration and mental symptoms were severe, the disease bore a certain resemblance to those cases described by Lederer (1925, 1930), and classified by him as being acute hæmolytic anæmia. There is, however, little

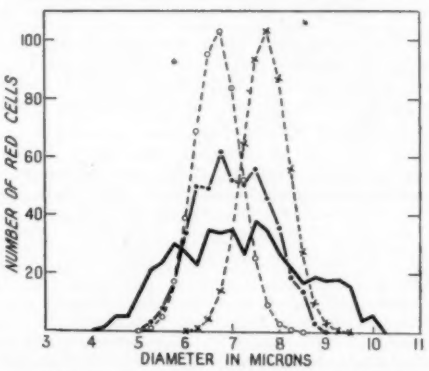

FIG. 2.—Price-Jones curves in the recovery period (interrupted line) and during the terminal crisis (continuous line). The actual values are as follows. Recovery period, Feb. 28th, 1936: M.D. = 7·023; σ = 0·784; v = 11·164 per cent.; megalocytosis, 0 per cent.; microcytosis, 1 per cent.: reticulocytes, 4½ per cent. During the crisis July 28th, 1936: M.D. = 7·155; σ = 1·298; v = 18·113 per cent.; megalocytosis, 13 per cent.; microcytosis, 15 per cent.; reticulocytosis, 81 per cent.

doubt that the anæmias he describes are merely acute attacks of acholuric jaundice—a view taken by Scott (1935), Murray-Lyon (1935), and Vaughan (1936)—and there is apparently no real basis for a separate classification. Whitby and Britton (1935) consider the good transfusion results in Lederer's anæmia to be a valuable diagnostic point, as is also the experience of other authors and of Lederer himself. In the present case the results of transfusion were unsatisfactory, recalling in some ways those obtained in two of Dawson's cases (1931). While the first two transfusions of 250 c.cm. and 320 c.cm. given 13 days before death were followed by a definite improvement in the general condition, this was not maintained. A further transfusion 4 days later was followed by a crisis, the patient becoming more deeply jaundiced, but without the unpleasant symptoms seen in Dawson's last case. A consideration of the first attack, in which no transfusions were given, might suggest that they should be withheld as long as possible, though in the terminal attack the patient was much more ill. None of the other remedies given seem to have been useful. When they were first administered the patient was in a recovery stage, and their continuance did not prevent a second attack. Splenectomy, which was not feasible owing to the patient's age and general condition, was the only treatment likely to have been successful.

The autopsy findings agree with those of the six cases given by Turnbull (1936). Similar collections of erythrocytes were found in the marrow at autopsy, though he does not appear to be certain, especially in the last two cases, whether they always lay within definite vessel walls or not. The condition, while resembling hæmorrhage into the marrow, clearly differs from it, since active hæmopoietic islets are to be found all through the mass of erythrocytes, and there is no evidence of degeneration. The process as seen near the edge of the marrow fat, where such exists, is due to a congestion and widening of the marrow capillaries as the fat disappears, so that the

blood comes to be in sinusoids lined by the former capillary walls. This is confirmed by the fact that the congested sinusoids are about equal in area to the fat cells they replace. The engorgement of the splenic pulp is another feature that seems to be common to all cases.

SUMMARY

1. A case of hæmolytic icterus was observed for nine months before death. 2. Mean cell diameter measurements by the Price-Jones method showed a high coefficient of variability, reaching 18 per cent. during the terminal crisis. Macrocytes and megalocytes were then equally balanced, so that the mean diameter remained within normal limits. 3. Autopsy findings were enlargement of the liver and spleen, the splenic pulp being engorged with erythrocytes. The femur and humerus contained a rich red bone-marrow all through their length, composed mainly of sinusoids filled with mature erythrocytes, and apparently derived from the pre-existing capillaries. The tibia was normal.

I should like to thank Prof. A. E. Naish for permission to publish this case and for his help during the period of the observations. I also wish to thank Dr. Alice Stewart of the Royal Free Hospital, London, for making one of the Price-Jones determinations and for her interest and advice.

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Clinical and Laboratory Notes

LYMPHOSARCOMA SIMULATING DUODENAL ULCER

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THIS case shows under what a simple disguise lymphosarcoma may appear to the clinician. As a rule it is possible to diagnose general lymphosarcomatosis before the patient comes to the post-mortem room, but in this case the disease showed symptoms referable to one organ only, and the true nature of the condition was only suspected a few days before death.

The patient was a man aged 23, lorry driver by occupation. He was admitted complaining of abdominal pain of five years' duration. The pain was just below the umbilicus and passed to either side of the abdomen. At first it came on ½–1 hour after meals and lasted up to 2 hours. The attacks came on spontaneously and used to last for 3–4 weeks. There were free intervals of 3–4 months. Lately the attacks had come on with greater frequency and five weeks before admission he vomited for the first time. The vomiting became more frequent, usually occurring up to 15 minutes after a meal, and made no difference to the pain. There was no hæmatemesis. Although the patient looked thin he did not complain of loss of weight. His appetite was good and bowels were regular. He had never noticed signs of melæna. Occasionally he had attacks of flatulence.

The patient looked anæmic. The blood count was: hæmoglobin 44 per cent., red cells 3 million, colour-index 0·73, leucocytes 18,600 per c.mm. (polymorphs 77 per cent., lymphocytes 19 per cent., monocytes 3 per cent., eosinophils 1 per cent.). There was no abdominal tenderness present and no other abnormal physical signs. Below the left angle of the mandible there was an oval, mobile swelling, 1 in. by ½ in., which the patient appeared to have had as long as he could remember.

A provisional diagnosis of duodenal ulcer was made and the patient was treated by drip transfusions and diet. Frequent occult blood examinations were strongly positive, but a fractional test-meal could not be estimated owing to the gastric juice containing abundant altered blood.

There was no improvement whatever. In spite of the drip transfusions the hæmoglobin fell, although at times a rise of 1–3 points was recorded. He vomited on several occasions and each time the vomit contained altered blood. Three weeks before death a white cell count was 11,500 per c.mm. with the differential count of polymorphs 74 per cent. lymphocytes 25 per cent., and monocytes 1 per cent. A week before death the blood-serum was noted to be icteric and gave a direct positive van den Bergh reaction. This suggested the possibility of malignant disease obstructing the flow of bile, and on examination a tumour was discovered in the epigastrium. There was also general enlargement of the cervical glands. A fixed mass in the pelvis was found just before death. Altogether the patient was in hospital about seven weeks.

POST-MORTEM FINDINGS

Emaciated young man. Slight fullness of the thyroid gland. A few visibly enlarged glands in the neck. Abdomen distended. Tonsils not enlarged. The pericardial sac contained about 6 oz. of clear straw-coloured fluid. The heart was normal in size, but the pericardial surface was covered by many patches of secondary growth; the chordæ tendiniæ also contained a few nodules, but the rest of the endocardium was normal. The lungs were congested; there were secondary deposits of growth in the right and left fourth ribs. The left lobe of the thyroid was normal; the right lobe was somewhat enlarged and contained a hard growth about the size of a walnut; the cut surface was hard and homogeneous.

The abdomen contained numerous loculated collections of faintly purulent fluid. The omentum was invaded by growth and was lying rolled across the epigastrium. All the abdominal lymphatic glands were greatly enlarged and matted together. A large mass of glands was present in the pelvis. The inguinal glands were enlarged. The stomach was infiltrated by growth and the mucous membrane showed numerous round ulcers with raised edges. One very large ulcer, 1½ in. in diameter, had completely perforated the posterior gastric wall and its edges were adherent to the liver.

The pancreas was one mass of growth. Glisson's capsule contained a secondary deposit, but the liver itself appeared normal. The spleen was also of normal size and looked healthy. Neither of these two organs contained macroscopical deposits of growth. Both kidneys were greatly enlarged and contained circumscribed neoplastic deposits of various sizes. There were a few enlarged glands along the left ureter. The bladder was normal. Both testicles were normal. The brain and skull showed no abnormality.

MICROSCOPICAL EXAMINATION

Glands in neck.—Filled with large round cells, containing a well staining nucleus almost filling the cell. The cells are attached to a faint, branching reticulum, and show active mitosis. The very scanty lymphoid tissue is compressed at the periphery of the gland. Bands of fibrosis can be seen traversing the gland.

Stomach.—The mucous membrane shows partial destruction by sarcoma cells. There is derangement of the alveolar structure of the mucosa. The spread appears to take place through the submucosa, which contains an uninterrupted solid mass of sarcoma cells. The gastric muscle is partially invaded by growth.

Omentum.—Complete invasion by growth.

Liver.—The liver cells contain a considerable amount of pigment, but appear otherwise normal. The hepatic

arteries are clear but the portal veins contain numerous malignant cells, which as yet show no evidence of invasion.

Spleen.—The lymphatic element is replaced by large round cells with deeply staining nuclei. There is considerable congestion. The sinuses are filled with blood corpuscles and the sinusoidal walls appear normal.

Heart.—Shows the growth infiltrating between the muscle strands and separating them. A coronary artery shows invasion of the adventitia, but media and intima are free of growth.

Thyroid.—Shows invasion of the right lobe. The left lobe appears normal.

It is impossible in this case to determine the site of the primary growth, the enlarged gland in the neck being the only lymphatic abnormality to have existed for any length of time. It seems unlikely that the gastric symptoms could have been due in the first place to a neoplasm of such undoubted malignancy, for the patient would probably not have lived for five years.

It is interesting to note that generalisation of the disease occurred without alteration of the lymphocyte count. The raised polymorph count can be accounted for by the local peritonitis caused by the gastric ulceration.

We are grateful to Mr. H. W. B. Wright for permission to publish this case.

LYMPHATIC CYST OF THE MESENTERY AND VOLVULUS IN A CHILD

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THE patient, a little girl aged 5 years and 8 months, was well until 2 years of age when she first complained of abdominal pain. Six months later she had another attack of pain accompanied by vomiting. At the age of 3 years and 9 months she was seen for the first time by a doctor. She then complained of acute umbilical pain and suffered from retching but did not vomit. Her pulse-rate was 100 and her temperature 98·4° F.; the only physical sign was some epigastric tenderness. The bowels were regular. Taking only fluids by mouth (with lemon and glucose solution to combat acetonuria ++) this attack was over in three days. During the attacks of abdominal pain she always adopted a kneeling position keeping her head bent down.

After this attack further medical advice was sought, a diagnosis of "acidosis" was made, and the appropriate treatment ordered. Following this she had several minor attacks for which it was not necessary to call her doctor. When aged 4¾ years she had another fairly severe attack and was given glucose by mouth and per rectum. Two months later came another less severe attack and there was another one again after two more months' interval. At this period the urine showed *coli* bacilluria which responded to treatment. There were no further attacks for about 7 months, after which she again suffered from abdominal pain and vomiting; during this attack the pulse rose to 110, and there was some abdominal distension.

I saw the child for the first time on the third day of this attack; the abdomen was distended and rigid, but free from pain or tenderness. The pulse-rate was 120 and the facies was "abdominal"; in fact the signs were those of acute obstruction with general peritonitis. Laparotomy was performed that same day, as speedily as could be arranged, by Mr. Max Page.

The whole of the small intestine was distended and deeply congested, as was also the whole of the mesentery. The bowel was completely obstructed after having become rotated on the mesentery. The strangulation was reduced by rotating the whole of the small intestine through three complete turns. In the cavity of the pelvis, and rising slightly out of it, was a large butter-yellow-coloured cyst which at first looked like a distended bladder; the cyst was opened and about 15–16 oz. of thin milk-like fluid was evacuated; the cyst was situated in the mesentery close to its attachment to the small intestine about 2 ft. above the ileocæcal valve. The cyst wall was removed and tied off, and the abdominal wound closed, a drainage tube being left in.

The child died about four hours after the operation.

The following are notes from post-mortem report by Dr. S. Wyard.

The whole of the small bowel from the duodenojejunal flexure to the ileocæcal valve is enormously distended; the wall is plum-coloured and there are numerous subserous and submucous hæmorrhages. The surface is smooth and shining. About half an inch above the ileocæcal valve is a mark encircling the bowel obviously due to a tight strangling constriction. The cæcal and ascending mesocolon is congested and shows many hæmorrhages, the whole of the mesentery is also congested and hæmorrhagic. About two feet below the duodenojejunal flexure is a surgical incision about four inches long, involving the mesenteric border of the bowel; the incision has been completely closed by sutures. Fluid removed from cyst, pale yellow and turbid, contained much albumin but no organised elements. The wall of the cyst on section appeared to consist of mesenteric tissue.

The time of origin of this cyst is doubtful, it may have begun when the child was two years old, or it may have been congenital. Its recognition during the early stages was obviously difficult, but the recurrent attacks of abdominal pain and sickness were probably due to it. Refuge in the diagnosis of "acidosis" was a misleading factor in this case as it has been in others.

Lymphatic cysts of the mesentery are rare and not many cases have been recorded in children.

Bland-Sutton (1922) comments on "a rare but interesting lesion known as chyle cyst of the mesentery." He compares them to omental hydroceles and ovarian cysts, and he states further that in infants or children, where many of them are found, these cysts are connected closely to the mesenteric border of the intestine and push their way between the layers of the mesentery. He concludes that these cysts are important, for they have caused fatal intestinal obstruction.

Swartley (1927) has written an interesting article on "mesenteric cysts" and describes the case of a girl, aged 7 years, which is very similar to the case which I now publish.

Eve (1898) reports the case of a cyst between the layers of the mesentery of the jejunum in a male child aged 11 weeks; and also in a child aged 3 years and 8 months, who had been admitted to hospital for "intestinal obstruction." Braquehaye (1892) classifies mesenteric cysts as follows:—

1. Sanguineous cysts—usually traumatic and occurring as diffuse hæmorrhages into the mesentery, into pre-existing cysts, or into solid tumours.

2. Lymphatic cysts, comprising chylous and most of the serous cysts. These arise in the thoracic duct, in the chylous vessels, or in the lymphatic glands of the mesentery.

3. Congenital cysts, chiefly dermoid, but occasionally cysts of the Wolffian body.

Lymphatic cysts are usually situated in the mesentery of the small intestine, usually near the spinal border,

but they have also been reported to occupy the mesocolon.

Pederson (1928) has reported the case of mesenteric cyst in a girl, aged 7 years, which ruptured after an injury and in whom there was a history of previous intermittent attacks of abdominal pain. Collins and Berdez (1934) report the case of a mesenteric cyst in a boy, aged 4 years, in whom a diagnosis of appendicitis had been made. Friend (1912) states that cysts of this nature may occur at any age and in either sex. In 52 cases, the youngest was a child of 5 weeks and the oldest 80 years. Rasch (1890) reports the case of "a cyst between the two layers of the mesentery" containing 6 pints of fluid which he thought had been caused by rupture of a chylous vessel of the mesentery.

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MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF OTOLOGY

AT a meeting of this section on May 7th, the president, Dr. DOUGLAS GUTHRIE, in the chair, a discussion took place on

Otitis Media in Early Childhood (under 5 years)

Dr. LE MÉE (Paris), opening the discussion, dealt almost exclusively with the kind of cases seen at 15 months of age and under, based upon twelve years' experience at the children's hospital in Paris. He said he had to include mastoiditis, as no infection of the tympanic cavity occurred without infection of the mastoid too. Infection extended from the pharynx to the mastoid. The Eustachian tube was very short, but in the infant its calibre was larger than in the adult; the mastoid antrum in the infant was also larger than in the adult, and its external wall was a mere thin lamina of bone. In the first stage of otitis the rhino-pharyngitis spread to the Eustachian tube, and the change of colour in the tympanic membrane indicated its participation in the reaction. Usually a few days after the performance of paracentesis the condition improved. A more serious type of otitis was the primary purulent oto-mastoiditis. To this condition Dr. Le Mée gave the name "unsuspected otitis," as the symptoms, instead of being localised in ear and pharynx, were systemic and general. In an infant febrile with no apparent cause, this type of mastoiditis must be suspected. A third and less frequent type was an otitic mastoiditis, and here a bone lesion was present, requiring removal of bone. A skiagram was useful in this type, but every care must be taken in interpreting it. Dr. Le Mée had found it best to do the mastoid operation in two stages. He wished, generally speaking, to insist that the surgery in infants must be done with great speed. The routine in his hospital was first to incise the periosteum and a day or two later to remove the portion of bone.

Dr. T. RITCHIE RODGER (Hull) analysed the 599 cases of acute otitis media seen in children under 3 years of age at the Victoria Hospital for Children, Hull, since the ear and throat department was established there nine years ago. Of these cases 249 were bilateral, involving 848 affected ears; 185 cases were of infants under one year of age, 80 being bilateral infections. There were 200 cases in children between one and two, 86 of them being bilateral. Of the 214 cases between two and three, 83 were bilateral, and 26 per cent. required mastoid operation. The bilateral condition was most frequent in the first four years of life, and thus both ears should be examined, even when the mother drew attention to one only; and further thorough examinations should be made at intervals during the whole time the patient was under observation. Sometimes the appearance of the tympanic membrane was deceptive. Probably many members could recall cases in which the temperature remained high or malaise continued despite myringotomy on one side, and this was explained by a discharge from the other ear. The incidence of mastoiditis requiring operation proved to be higher than was expected—namely, 19 per cent. of all infected ears at an age under one year; in the third year it was 26 per cent., in the fourth year 21 per cent. The proportion of cases operated upon was sure to be affected somewhat by the personal views of the surgeon. Every effort was made the prevent chronic otitis; if conservative measures, including removal of adenoids, were not successful, operation was recommended at a time which varied with the nature of the case. When mastoid tenderness or high temperature did not abate, operation was carried out without further delay. A bilateral infection did not necessarily mean a more virulent form of case. Otitis media was often associated with diarrhœa and vomiting, and sometimes a coincident chest condition had to be excluded as the cause of the symptoms and signs before the mastoid was explored. The incidence of tuberculosis in these cases had proved to be surprisingly small, under 5 per cent. in the series described; in a discussion on the subject in 1914 the incidence given was 50 per cent. of cases in Edinburgh up to one year of age and 27 per cent. in the second year of life. Dr. Rodger attributed this vast improvement to better sanitation and hygiene, and the active educational work of child welfare and other clinics. When tubercular otitis did occur, the treatment must be radical.

Dr. J. H. EBBS (Birmingham) presented an analysis of the results of consecutive post-mortem examination of the middle ear and mastoid antrum of 880 children, 80 per cent. of whom were aged 2 years or under. The rest ranged between 2 and 14 years, but the number over 5 years was small; 52·8 per cent. of the children were found to have a purulent infection of the middle ear and mastoid antrum. Of children dying in their first year as many as 62 per cent. had otitis media, in the second year 53 per cent., in the third year 33 per cent.; otology might thus play some part in reducing the mortality. The incidence of otitis media decreased progressively with the child's age; a slight rise between the 5th and 6th years might be related to school entrance. Among 496 children in whom one or more accessory sinuses were examined post mortem, a purulent infection was found in 152 (30·6 per cent.); 280 had otitis media and 161 had no sinusitis. In 200 cases examined bacteriologically, some had two or three kinds of virulent organisms; by far the commonest was the streptococcus. Tubercle bacilli were demonstrated

in 2 cases, the diphtheria bacillus in one; 238 infants under 2 years of age had severe diarrhœa and vomiting, either as a major complaint or a complicating factor. Dysentery organisms were found in 4 of these cases, 2 of which showed definite evidence of bacillary dysentery. Dr. Ebbs did not attribute the gastro-enteritis to otitis media but suggested that it was a serious factor in bringing about the fatal issue. A high temperature was nearly always associated with acute otitis media. Many patients showed their infection by a steep rise in the pulse-rate; in certain infants, who maintained a temperature of 96° and 97° F. for some days, the onset of the infection was marked by a jump in the pulse-rate. The ears of all infants with pronounced gastro-intestinal disturbance should be examined; drums should be freely incised but more extensive operation should be delayed when possible. In prophylaxis, breast-feeding was very important. Only 2 among this series of autopsies were of infants who had been breast-fed for an appreciable time. The danger of exposing these infants to respiratory affections suffered by adult contacts must not be forgotten. Dr. Ebbs said that the results of his investigation pointed to a possible coöperative effort between the pædiatrician and the oto-laryngologist which might be of very great value in the reduction of infant mortality.

Mr. W. STIRK ADAMS (Birmingham) spoke particularly of medical as contrasted with surgical otitis. Patients admitted to hospital because of something else who developed otitis caused considerable anxiety. Of 15 cases of secondary otitis developed in his hospital during the last two years 10 belonged to the diarrhœa and vomiting group. Of the infants who had diarrhœa and dysentery about a third died; thus the problem was very serious.

Mr. C. E. SCOTT (Edinburgh) said that in the ear and throat department of the Royal Edinburgh Hospital for Sick Children, he and Dr. R. B. Lumsden had treated 564 cases of suppurative otitis media between 1934 and 1936 inclusive; 145 of the children were under a year old and 419 were over one but under five years old. 154 required operation; of 136 who were subjected to the Schwartze operation 132 recovered. As to complications, 2 developed erysipelas, 4 measles, 4 scarlatina, 2 kidney trouble. The only intracranial complication was thrombosis of the lateral sinus (4 cases). Myringotomy was carried out 52 times, and 14 of those patients subsequently required a Schwartze; 22 per cent. of the total number had a Schwartze done without previous myringotomy. They had been impressed with the value of the X ray picture of the mastoid, even in such young infants. Tuberculous infection of the middle ear was formerly much more common in young children than now; in the period under review the incidence was only 1·5 per cent. of the total.

Dr. LUMSDEN, referring to the occurrence of tuberculous infection of the ear, said that at a hospital 35 miles from Edinburgh the incidence was nearly 40 per cent.; yet a careful inquiry showed that the disease was fairly evenly distributed between town and country dwellers.

Mr. ERIC WATSON-WILLIAMS (Bristol) said that the results of an analysis of a series of cases of mastoid disease made by him had suggested that the incidence was highest in children under a year old; the highest incidence of otitis media was in the first two years of life. Otitis media meant infection of the whole middle-ear tract. There was no barrier dividing the tympanum from the mastoid, which became infected a few minutes after the tympanic cavity was diseased. If a child's condition caused it one sleepless night, that was an indication for myringotomy. Quick operation was essential; a good average was a minute for each month of age—e.g., for a child of 7 months, a 7-minute operation. A 20-minute operation was a severe ordeal for a young infant.

Dr. MCNAIR SCOTT said that, as a pædiatrician, he was sometimes puzzled, when looking at the ears of infants, to know what to do. A child perhaps had an upper respiratory infection and a red ear-drum, but showed no indication of being in pain. Should that ear be opened? If left without opening a certain number of infections subsided; in others general symptoms increased and the ear had to be opened next day. A red ear-drum was commonly associated with pneumonia, but often no local intervention was required. Type 3 pneumococcus seemed to have a special predilection for the ear, and perhaps the drum should always be opened when the infection was of that type.

The PRESIDENT said that this subject had attracted too little attention from otologists. Otitis media was found in a large proportion of infants in hospitals, whatever the disease which brought them there, and at autopsy pus was found in the middle ear in many of them. The question arose whether this was a primary or a secondary condition, whether it was responsible for the malnutrition, pneumonia, or gastro-enteritis from which so many suffered, or was a secondary phenomenon of comparatively slight importance. Ten years ago he had prepared a chart to show the extraordinary prevalence of otitis in infants; from 75 per cent. to 90 per cent. of infants, who died from all causes before completing their first year, had otitis. One reason for this high prevalence was that when the child was born there often remained fragments of embryonic connective tissue, such as filled the middle ear during embryonic life and became absorbed at about the time of birth. Portions might remain in the corners of the tympanum, however, and that embryonal tissue was very liable to become infected. The President asked why Dr. Le Mée did the mastoid operation in two stages. He agreed with Dr. Ebbs that the mastoid operation was seldom justifiable in children suffering from gastro-enteritis. He did not think X ray evidence very useful in connexion with mastoiditis in children, but it might show the position of the lateral sinus, and its state of pneumatisation.

Dr. LE MÉE, in reply, said that since the mastoid operations were done in two stages at his hospital complications had been fewer; this experience was shared by Neumann. He used as an anæsthetic agent very cold water or ice applied to the back of the ear; he was sure it prevented the infant feeling pain.

Dr. RITCHIE RODGER said that when he referred to speeding up the operation he was not thinking of the simple incision.

ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON.—At a special court of governors of this hospital on May 5th it was announced that the electrical and massage work which is carried out at present in a basement of the hospital is to be transferred to an adjoining property at a total cost of £8000, towards which Mrs. H. G. Latilla has contributed £3750. A balance from a fund has reduced the sum required to £2000, and the governors are appealing for this sum. The new department is to be called the Latilla department of physical medicine, and it is hoped it will be opened early next year. The transference will allow of a further extension of the X ray department at the hospital, and provide room for the installation of the Chaoul apparatus presented by the Sussex branch council of the British Empire Cancer Campaign.

ROYAL ACADEMY OF MEDICINE IN IRELAND

AT a meeting of the section of obstetrics on April 9th, with Dr. T. M. HEALY in the chair, a paper on the treatment of

Varicose Veins in Pregnancy

was read by Dr. EDWARD SOLOMONS. Sixty patients, he said, were selected at the antenatal department of the Rotunda Hospital for treatment of varicose veins by injection. They were chosen either on the ground that the veins would be easier to inject during pregnancy or because of symptoms such as cramps or swelling of the legs, irritation of the skin, pain in the veins, or mental or physical discomfort. The condition was bilateral in 38 cases and unilateral in 22, while 4 had varicosities on the vulva as well. A history of phlegmasia was regarded as a definite contra-indication to treatment, and in all cases where impairment of the deep circulation was suspected special investigation was made. The injection was done with the patient lying down and the leg slightly elevated; thus the empty-vein technique was used, but a tourniquet was not required since only clearly visible veins were injected. The fluid injected was a sterile solution of quinine hydrochloride (0·266 g.) and urethane (0·133 g.) in 2 c.cm. of distilled water, made by Parke Davis and Co., and the maximum amount given at one time was 2 c.cm., usually distributed in four doses at different sites. In 15 of the 60 patients the veins were very large and an Elastoplast bandage was applied to the whole leg below the knee immediately after injection. This was removed in three weeks' time, and in 7 patients no further treatment was required. In the other 8, further injections were given and the bandage again applied. The interval between injections was never less than a week, and at least a fortnight was allowed between injections at the same site, so as to let any reaction settle down. It was usually advised that injections should begin near the foot and work upwards, but in these cases the veins most enlarged were injected first.

The results, said Dr. Solomons, were very satisfactory, but not all the women were free from subsequent discomfort. In 6 patients there was enough inflammatory reaction to necessitate treatment, and 2 of these said they would have rather remained untreated. In 4 cases varicose veins of the vulva were treated by injection with very good results, and in 2, dramatic relief was obtained from severe pruritus. It had only been possible to follow up 45 out of the 60 patients, but these had no complications in the puerperium, and 3 had subsequent confinements without recurrence of the condition.

The CHAIRMAN asked why the treatment was stopped in the seventh month of pregnancy. He also asked whether Dr. Solomons would limit injection to cases in which there was actual pain. He regarded the results as extremely good, and believed that almost complete success might be expected among patients who could afford to have more rest during and after pregnancy.

Dr. A. H. DAVIDSON said he understood that urethane gave rise to a lot of pain if the injection did not all get into the vein. Had Dr. Solomons any experience of sodium morrhuate?

Dr. O'DONEL BROWNE asked Dr. Solomons how he decided on the site of injection, and said that varicose veins in the vulva were often very difficult to deal with.

Dr. F. DOYLE had seen a patient who had had injections for varicose veins and suffered great trouble in subsequent pregnancies. He was rather antagonistic to injections during pregnancy, though they might sometimes be beneficial.

Dr. G. TIERNEY was in favour of the injection of varicose veins after pregnancy, but was not enthusiastic about injection during pregnancy. If it was done in the last three months he doubted whether much relief would be obtained. For varicosities of the vulva, especially during the early months, it had a very definite place.

Dr. J. S. QUIN said that if the treatment of varicose veins in pregnancy would allow a woman who would otherwise be more or less bedridden to get about, he thought it should be used; but if the subsequent reaction, or the period that had to elapse before recovery, was such that no obvious benefit would accrue in the last two months of pregnancy, then it seemed that the treatment was unnecessary. In these cases one must consider not only the patient but also the doctor. If anything happened after the injection of a varicose vein, the injection would certainly be blamed, whether or not it had the remotest connexion with what had happened.

Mr. R. M. CORBET said there were apparently two classes of patient—the one with bad varicose veins who kept them after delivery, and the one with bad varicose veins who showed no sign of them six months later. In the second type injection was probably unnecessary, but in the first he was sure it was very useful.

Dr. SOLOMONS, in reply, said that if he saw a case in the eighth month that he thought could be cured by injections in a fortnight's time, then he gave a course; but otherwise he only treated patients up to the sixth or seventh month. He did not attempt injections unless the veins were causing discomfort. One of the most severe reactions he had got was in a case in which he used sodium morrhuate. In patients who had very large veins, especially near term, injection treatment was foolish; the treatment then was an elastoplast bandage. He thought that with the gradual advance of injection treatment, sloughing would be much less frequent than at present. If there was any doubt as to whether one was in the vein it was best to withdraw the needle. He did not consider that patients who were bedridden derived any benefit from injections. Although certain veins might go away after pregnancy, it had to be remembered that the next time the patients became pregnant they would suffer similar discomfort. The best time to inject was when the veins could be seen fairly easily.

Diabetes and Pregnancy

Dr. H. V. TIGHE read notes on three pregnancies in a diabetic.

The patient came under his care in January, 1935. She was aged 27 years, married 15 months, and pregnant for the first time. She had been under treatment for diabetes mellitus during the previous four years and two months, and before becoming pregnant had been admitted to hospital in diabetic coma. She was receiving 75 units of insulin daily, and despite this her urine was rarely sugar-free and her blood-sugar remained high. In April, 1935, when 32 weeks' pregnant she went into labour. The baby, weighing 4 lb., lived half an hour. Five months later she again became pregnant and at 32 weeks gave birth to a baby weighing 5 lb. which died shortly after delivery. The third pregnancy began two months later, and with a more stringent diet and larger doses of insulin proceeded to 37 weeks when labour was induced. This

baby when born weighed 8½ lb. and appeared healthy, but died 48 hours after birth. At autopsy the cause of death was found to be suprarenal apoplexy.

Dr. Tighe said that nothing was observed in this case to support the view that the diabetic mother benefits from an additional supply of insulin from the fœtus or that pregnancy produces a lasting exacerbation of the diabetes. While insulin has greatly lowered the maternal mortality, it has not proved so effective in reducing the fœtal mortality. The causes of fœtal death were poor control of the maternal disease during the later months, hydramnios, congenital abnormalities and over-development of the fœtus. Neonatal hypoglycæmia, following hypertrophy of the islands of Langerhans, had also been suggested as a cause of fœtal death, but no enlargement of the islands was found in the baby which came to autopsy. Where there was dystocia due to the large size of the babies he preferred induction to Cæsarean section.

Dr. O'DONEL BROWNE knew of no recorded case of diabetes with three pregnancies. This case was characteristic in that the labours were premature, hydramnios was present in each of the pregnancies, the children were overweight, and while two were born dead the other did not survive long. It would have been interesting if Dr. Tighe had been able to test the liquor amnii for glucose—particularly if fœtal urine had also been tested, for some authorities claimed that the presence of glucose in the liquor amnii indicated its origin as a transudation from the maternal system since fœtal glycosuria was extremely rare. As regards treatment, Dr. Browne's view was that the diabetes should be treated irrespective of the pregnancy and that induction should be practised if disproportion was likely to arise owing to the size of the fœtus.

Dr. QUIN disagreed with Dr. Tighe's view that there was no objection to a diabetic patient becoming pregnant. The results of pregnancy in diabetes were such that it should be discouraged unless means could be found for obtaining more fortunate results.

Dr. MICKS referred to two cases of diabetes under his care in which labour had been induced, in both of which the baby had been strong and over the usual weight at birth, and the mother had done very well. In diabetes during pregnancy the urine should always be tested for ketone bodies; acute cases which went too far were liable to become quite uncontrollable. There was nothing to be gained by giving very large amounts of insulin.

Dr. CORBET said that of two diabetic cases under his care during the last year one had had no trouble at all, whereas the other was fatal; the patient had been getting 90 units of insulin a day before she became pregnant. The lesson to be learned was that one must not allow oneself to do anything in connexion with the pregnancy while the diabetes was very severe. In these cases he always refused to induce labour. In his case that died, the patient came into labour herself, produced a macerated fœtus, and died very quickly.

Dr. TIGHE, in reply, said that the diabetes should be treated as a thing quite apart from the pregnancy, and the pregnancy should be allowed to proceed normally. As the children of diabetic women were not likely to be diabetic, there could not be any plea for sterilisation of diabetics on eugenic grounds.

Face Presentation

Dr. DAVIDSON, master of the Rotunda Hospital, showed an X ray film of a primary face presentation, and also presented an analysis of face presentation at the Rotunda for the previous forty years. There were 175 cases, excluding anencephalus, a frequency rate of 1 in 450. A quarter of the patients were primiparæ. The fœtal mortality-rate was 8·6 per cent. In 134 cases the fœtus was delivered spontaneously as a face presentation; 11 were treated by internal version, 6 by Schatz and 7 by Thorn's conversion to vertex. Forceps were applied to the face in 6 cases. Cæsarean section was carried out in 3 cases, perforation was required in 4, and pubiotomy in 1. There were only 3 cases of impacted face, a frequency of 1 in 58. During the ten years 1926–36 there were 77 cases of face presentation of which 71 were born spontaneously as face presentations. If there was no disproportion the case should be left to nature and spontaneous delivery expected. Interference was required, however, if the face was arrested at the brim or on the perineum. With arrest at the brim conversion to vertex or preferably internal version should be adopted; with arrest on the perineum forceps might be applied. There were very few cases of major disproportion in this series, Cæsarean section only being adopted on three occasions.

Dr. O'DONEL BROWNE pointed out that the Rotunda incidence of face presentation, as given by Dr. Davidson, was approximately half the incidence generally reported—namely, 0·42 per cent. He strongly advocated non-interference except in the relatively rare instance when the fact became impacted in the pelvic cavity as a mentoposterior. In these circumstances conversion to vertex, or if necessary internal version, was the treatment of choice. In the earlier stages of labour, he practised Schatz's manœuvre and had been gratified by the results. He strongly condemned forceps delivery in cases of face presentation when the chin was posterior, quoting the maternal fatality-rate associated with such treatment as 12 per cent., with a minimum fœtal fatality of at least 50 per cent.

Dr. CORBET said that Dr. Davidson's figures were very good. He had only seen one case of true impacted face, and this was terminated successfully by a forceps delivery after partial rotation; the mother and the baby both lived. He had seen two face presentation cases where the neck was so stretched that the baby could not hold its head up. Most cases were diagnosed when the face was on the vulva. The conversion of a primary face presentation in a multipara depended very largely on the contraction of the uterus and on the actual position of the face itself. Internal version could be exceedingly difficult. It was safe to leave the vast majority of face presentations alone, but one must be sure that the face was the whole problem, and that the primary fault was not disproportion. One should not wait too long, but should watch the cases carefully so as to be able to interfere in time if interference became necessary.

Dr. DAVIDSON, in reply, said he thought the reason why so few Cæsarean sections were done was because face presentation was a very uncommon result of flat pelvis.

OPHTHALMIC HOSPITAL IN JERUSALEM.—This hospital, which is under the auspices of the Venerable Order of St. John, is planning large additions and an appeal is being made for at least £20,000 to provide funds for the erection of a new block to contain eight wards for paying patients, and a new out-patient department.

REVIEWS AND NOTICES OF BOOKS

Handbook of Hygiene

By JOSEPH W. BIGGER, M.D., D.Sc., F.R.C.P.I., D.P.H., Professor of Bacteriology and Preventive Medicine, University of Dublin. London: Baillière, Tindall and Cox. 1937. Pp. 406. 10*s*. 6*d*.

THIS book is intended primarily for medical students, but the author hopes with justification that it will also help the practitioner who is not a specialist in public health to play his part in the prevention of disease. For such readers the prevention of disease has a more direct appeal than the promotion of physical fitness, and Prof. Bigger wisely approaches most of his topics from the former angle. Not that the promotion of health is neglected. The last chapter is entirely devoted to the assessment of normal health, a pursuit which is one of the greatest contributions the general practitioner can make to the study and practice of preventive medicine.

About a third of the book deals with communicable diseases, their character, mode of transmission, epidemic behaviour, and prevention. Separate chapters are given to insects and vermin, to parasitic worms and to diseases of uncertain ætiology, including rheumatism, diseases of the heart and blood-vessels, anæmias, nephritis, diabetes, and cancer; goitre is briefly discussed in the chapter on water. Water, food, ventilation, disposal of waste, environment—i.e., climate, soil, building, construction, heating, and lighting—occupational hygiene, and personal hygiene receive consideration in separate chapters. Maternity, infant, and child hygiene have brief, but probably adequate, attention. A separate and informative chapter is devoted to poisonous gases, especially those used in warfare. Vital statistics are the subject of the first special chapter.

It is essential that a book on hygiene, with which students have little practical contact, should be easy to read, and that any dogmatic statements made in it should be capable of substantiation. This book answers these requirements. The author makes it clear whether he is expressing a personal opinion or an accepted thesis. The chapters on communicable disease are carefully put together and modern in their substance. The brief discussion of vital statistics is excellent for the purposes of the medical student. With the reservation made by the author himself—that occasional errors are inevitable in a book of such wide scope—it can be cordially commended to teachers and students of public health, as well as to general practitioners.

Passive Vascular Exercises

By LOUIS G. HERRMANN, A.B., M.D., Assistant Professor of Surgery, University of Cincinnati; Director of Vascular Disease Clinic of the Cincinnati General Hospital. London: J. B. Lippincott Co. 1936. Pp. 288. 20*s*.

DISAPPOINTMENT has followed most surgical procedures designed to save limbs affected by structural arterial disease. Any alternative method which offers a substantial degree of palliation by conservative means is therefore of interest, and an authoritative evaluation of "Pavaex" therapy by its inventors deserves careful consideration by those who have to undertake the management of this prevalent disorder. Dr. Herrmann's book has been divided almost equally into two parts, one historical and theoretical and the other practical; the application of the method is described and hints are given on the selection of cases suitable for its use. The development of the therapeutic use of positive and negative pressures is traced back to the eighteenth century. This portion of the book, though of great interest, seems to us unduly long. The physiology of the circulation also might have been more briefly (and more accurately) described since the success of "Pavaex" therapy depends on the precise degree and rhythm of the changes in pressure required to produce the best results.

The clinical section of the work gives the impression that the author has based his opinions upon theoretical considerations rather than upon the results of treatment. He states clearly the contra-indications to the method—spreading phlebitis, infection, and extensive thrombosis of the small vessels; and he advocates its use in embolic obstruction of main vessels. It is well known, however, that the risk of gangrene in a case of main vessel obstruction is in any case comparatively slight, whereas Dr. Herrmann gives numerous examples of gangrene due to small vessel obstruction which have been amazingly improved by "Pavaex" therapy. There seems to be no doubt that this is a valuable aid to conservatism in the treatment of threatened gangrene, but the book fails to indicate clearly the clinical criteria whereby those cases may be selected which should derive most benefit from it.

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1. Oral Diagnosis and Treatment Planning

By KURT H. THOMA, D.M.D., Charles A. Brackett Professor of Oral Pathology, Harvard University. London: W. B. Saunders Co. 1936. Pp. 379. 25*s*.

2. Oral Diagnosis and Treatment Planning

By S. C. MILLER, D.D.S., and Twenty-two Contributors. London: J. and A. Churchill. 1937. Pp. 620. 30*s*.

1. IT is unusual to find two books published within a few months of each other, having the same title and covering so closely the same ground. Prof. Thoma's book, being by one author, has the advantage of a continuity which works written by many contributors often lack. It is essentially a book of diagnosis and pathology is reduced to a minimum. The salient feature of the book is the description under various headings of the method of systematic diagnosis: the chapters on general physical examination, laboratory tests, and radiology give the practitioner sufficient information to keep his knowledge up to date and to enable him to correlate the various methods of diagnosis. The remainder of the book is devoted to a clinical study of the various dental and oral diseases. The common conditions familiar to every dentist are described as well as the more unusual oral ones which may give rise to some difficulty in diagnosis. The numerous illustrations, many of them in colour, deserve high praise.

2. Mr. Miller's work is more limited in scope. It deals chiefly with dentistry proper and discusses such aspects as caries, parodontal disease, bridgework, orthodontics, and denture design. It is more practical if more diffuse than Prof. Thoma's book. Some of the chapters are excellent, such as that on surgical conditions by T. Blum, and lesions of the hard tissues by A. Walker. The three chapters on parodontal disease show how firmly the concept of traumatic occlusion, or as it is now termed, traumatogenic occlusion, is held in

America and how much it has influenced treatment. According to this book almost the whole treatment of pyorrhœa consists of correcting this hypothetical malocclusion which is regarded as the chief cause of the disease. Infection is only a secondary factor and does not appear to call for any special treatment. Extraction is only advised for teeth denuded of their periosteum to the apex, and gingivectomy is held to have but a limited application. The large number of illustrations are mostly good and the book is well produced. For reference purposes both of these books will be found useful though we must confess to some doubt as to how far they are likely to help the dentist in planning his treatment.

Synopsis of the British Pharmacopœia

Thirteenth edition. With addendum, 1937. By H. WIPPELL GADD, Barrister-at-Law, Middle Temple and Western Circuit. London: Baillière, Tindall and Cox. 1936. Pp. 200 + 12. 3*s*.

THIS useful little book has been brought up to date by the introduction of a twelve-page leaflet dealing with the Addendum, 1936, to the British Pharmacopœia, 1932. All the important modifications of the text of the Pharmacopœia have been included with the addition of certain changes in the Poisons Rules. Some difficulty will be experienced in applying to the main text of the synopsis the alterations given in the leaflet. It is to be hoped that an entirely new edition will be forthcoming with these alterations included. The remainder of the leaflet will be found useful as a source of speedy reference to the more important features of the new drugs and preparations of the Addendum.

Meditatio Medici

A Doctor's Philosophy of Life. By W. CECIL BOSANQUET, D.M. Oxon., Fellow of the Royal College of Physicians; formerly Fellow of New College, Oxford. Aldershot: Gale and Polden. 1937. Pp. 162. 7*s*. 6*d*.

THE aim of philosophy, according to Herbert Spencer, is to make science "a system of completely unified knowledge." William James defined it more brightly as the response to the "desire to attain a conception of the frame of things which shall on the whole be more rational than the somewhat chaotic view which everyone by nature carries about with him under his hat." Judged by these standards Dr. Bosanquet's little book has certainly a claim to contain a philosophy. His condensed and objective summary of general scientific knowledge is written with a remarkable sweep and elegance. It is not clear why the title "meditatio" should have been chosen for we have come to apply the term to a highly individual mental act and the essay is about as impersonal as it well could be. Perhaps the author wishes to convey to us that any attempt to make a "frame of things" must in the end be a personal construction. And with all his efforts at self-elimination Dr. Bosanquet's "Weltanschauung" gives us in reflex something like a portrait of his mind—in dry-point perhaps—but none the less arresting in its finish and poise. In so far as he can be referred to a school he appears to lean to the doctrine of Heracleitus, to whom the central fact of the universe was that all things change; and as with most of those who are preoccupied with the mutability of things there is an undertone of pessimism to his thought. This does not prevent his summing-up of things from being on the whole both just and sympathetic. It is only when he treads on the treacherous ground of sociology that he makes an occasional false step—for example, his statement that under modern democracy "Freedom of labour is rigorously restricted in order that the clever and efficient may be duly handicapped to the level of the idler and the weakly." This is the sort of "loose stuff" off which it is easy to score.

Organic Chemistry for Medical Students

Second edition. By GEORGE BARGER, M.A., D.Sc., LL.D., F.R.S., Professor of Chemistry in Relation to Medicine in the University of Edinburgh. London: Gurney and Jackson. 1936. Pp. 251. 10*s*. 6*d*.

IN the preface to the first edition of this book, which appeared in 1932, Prof. Barger explained that in his view "the chief reason for including organic chemistry in the medical curriculum is to provide a basis for biochemistry or chemical physiology and pathology." With this guiding principle in mind he has passed lightly over some of the more important types of syntheses employed in organic chemistry, and has laid greater emphasis upon those aspects of the subject which are of more immediate biological interest and which are likely to be of use to the medical student in his later studies; the text moreover is replete with somewhat out of the common facts and observations calculated to stimulate interest. The chief alteration in the present edition is the bringing up to date of the salient facts concerning the chemistry of the hormones and vitamins. The size of the book remains the same as before but there is a welcome reduction in price.

Elementary Human Physiology

By SHERBURNE F. COOK, Associate Professor of Physiology, University of California. London: Harper Brothers. 1936. Pp. 539. 12*s*. 6*d*.

THIS attractive volume is stated to be designed for students who require a less advanced treatment of the subject than do medical students. The author's estimate of his work is too modest. It is true that it falls just short of the type of text-book one recommends as being thoroughly adequate for a medical course, but many teachers of physiology would be relieved if they could be assured that every student in their class had a complete grasp of its contents. Prof. Cook's book must not be confused with the excellent short ones which present physiology to the completely uninitiated. It is straightforward physiology, set out in such a plain way that one cannot fail to visualise the functions described or to understand the principles underlying them. It is a live treatise, written on the assumption that the reader has a scientific training and a critical mind. The book will make some wonder if many of the older texts, which run through edition after edition in order to be kept up to date, have not served their period of usefulness. For this work is a real revelation of what can be done by making a completely fresh start and presenting physiology as it is to-day, rather than by regarding new knowledge, which sometimes strikes at the very foundations of a subject, as in the nature of an addition to what is already known. The pictures and diagrams are refreshing, instructive, and not dictated by tradition. The coherence and almost ruthless elimination of irrelevancies in this work make it an excellent foundation for any course of study comprising physiology.

THE LANCET

LONDON: SATURDAY, MAY 15, 1937

SHALL I GET BETTER?

AMONG many letters praising the articles on prognosis which appeared in these columns between 1934 and 1936 we had one from a practitioner who hoped they would soon cease to appear. Pressed to explain why, he wrote: "In a large practice one has not a great deal of time for reading, and I am more interested in diagnosis and treatment of patients I see every few days than in knowing what is going to happen to them perhaps many years hence. Life seems too short for the leisurely atmosphere of prognosis to appeal to me." This critic had assumed, without justification, that the authors would deal only with remote and not with immediate prognosis. But the main interest of his comment lies in his conception of the doctor as concerned with the cross-section of the patient's disorder at the time of the consultation, rather than with any serial story of its manifestations throughout life. Unfortunately many doctors must perforce restrict their horizon in this way, if they are to get through their daily round. But such an attitude is dangerous, if only because unless the practitioner makes a mental picture of the probable course of the disease, the course of treatment he prescribes may be unwise or at best unnecessary. In the words of Hippocrates "he will carry out the treatment best if he know beforehand from the present symptoms what will take place later." Moreover, it must not be forgotten that to the patient diagnosis and treatment are merely the technique of his adviser, used as means to an end; it is with the end alone that he himself is deeply concerned, and to him the prognosis is the essence of any medical consultation. Indeed all his questions (e.g., What is the matter with me? What can you do for me?) are really designed to elicit the answer to one, much more urgent, which he hardly dares to frame, lest the response should shatter his confidence: Shall I get better, and soon enough not to endanger my livelihood, or (on a higher plane) the completion of the work I have in hand?

This, in relation to every patient whose indisposition is not trivial, is the real problem confronting the practitioner day by day. All his energy is bent to its solution, though he may not realise it. And since the most potent agent at the doctor's disposal is his power to give the patient confidence, he cannot afford to ignore or disregard this unspoken desire to know something of what is likely to happen. Not that any statements made need be specific or unguarded; to satisfy the patient requires much less definite information than might be expected. His need for reassurance is great and he will not only snatch at a straw of hope but will gain support from it, so buoyant, to him, is its fabric. Even when the diagnosis is obscure, and the treatment expectant, such negative conclusions as an experienced clinician may safely draw will often suffice to give not only the patient but his friends the help they need. Even when it is not possible to say, as it quite often is, "you are going to get well," the doctor may be able to recognise, deep below the surface, the particular phobia which is a torture and to remove it by an assurance, for example, that whatever the trouble is it is certainly not cancer. So twisted and illogical are our subconscious fears that a man may live contented for months suffering from a disease far more fatal than the dreaded one. An example recently before us was a woman whose slow recovery from an atypical pneumonia led to suspicion of tubercle. She would hardly consent to go to a chest hospital for observation and radiography, so great was her fear of contracting the infection. A temporary improvement gave her a respite; and when, soon afterwards a thoracic growth was diagnosed, she was so much relieved at the exclusion of tubercle that she submitted cheerfully to a course of deep X ray treatment, enjoyed to the full the relief from symptoms it produced, and, when she became ill again, remained hopeful of another remission until her peaceful death.

Similar stories will occur to all of us. They are relevant to discussions on prognosis in so far as they show that the patient's attitude to any disease is coloured by his previous impressions of the prognosis it carries. Often these impressions are incorrect or distorted, and hitherto the family doctor has not had any convenient means of reference to authoritative opinion. The series of articles on prognosis, of which the second group is published this week in volume form, was designed to fill this gap. No attempt was made to cover the whole ground of medicine and surgery. The invited authors dealt only with subjects on which they felt they had something to contribute, based either on wide experience or on a special study. But we have reason to think that the notes in each of the selected subjects will provide at best a safe guide to prognosis in individual cases, and at least a foundation on which more accurate estimates can later be built based on statistical data.

PRECAUTIONARY ENTEROSTOMY IN APPENDICITIS

ALMOST all deaths from appendicitis are preceded by diffuse peritonitis, and the mortality of this condition is estimated at 25–40 per cent. F. G. CONNELL points out[1] that such deaths should be attributed to septic peritonitis rather than to the appendicitis from which it originates, and he argues that as death from peritonitis is preceded by distension and ileus, and as the treatment of established ileus is unsatisfactory, we should try to prevent distension, ileus, and death by prophylactic intestinal decompression and enterostomy at the time of the appendectomy. This interesting suggestion is made in a brief editorial article and

[1] *Surg. Gynec. Obstet.* April, 1937, p. 836.

he does not bring forward evidence in support of it other than the statement that it seems to reflect a growing opinion.

When such a procedure is contemplated a number of considerations arise. The first is that when one is operating for appendicitis it is impossible to estimate accurately the extent of the peritonitis without subjecting the patient to the serious risk of further spread of the infection within the abdomen. If we hold to the time-honoured dictum of MURPHY to "get in quick and get out quicker," if we believe this advice to be of the utmost importance in our operation, any such investigation will be precluded. Secondly, how far would an opening in the intestine be valuable? We do not know whether there is greater risk in encouraging the intestine to move than in fostering the abolition of peristalsis in an attempt to localise the infection. We do not know whether more poison is absorbed from the mucosa of the reflexly immobilised intestine or from the serous lining on its exterior. We do not know, in fact, whether it is better to allow the unaccustomed stagnation of intestinal contents to persist or to run the risk of some increase in the area of peritoneal infection by encouraging an action of the bowels. Then again the ileus concerns the intestine in the region of the infection. It is from this pathologically changed gut that any absorption of toxin is likely to take place; but every surgeon who has performed enterostomies knows how useless and ineffectual it is to make an opening in such bowel. There is no discharge from the stoma until or unless the peritonitis subsides; indeed such a discharge is a sign that the patient is likely to recover, just as an action of the bowels in cases of peritonitis has almost from time immemorial been held to herald recovery. Hence an enterostomy, to be effective, would have to be made above the region of peritonitis, and where this is will be only a guess if the least possible exploration is carried out, as seems advisable. Such an enterostomy would do nothing to drain away the stagnating, decomposing, and poisoning contents of the paralysed segment of intestine. It is more likely to give exit to harmless intestinal content and lead to loss of fluid which the patient can ill stand.

These reflections are no more than inferences from the known pathological condition of the peritoneum and intestine in diffuse peritonitis and from the practical results of enterostomy. The question has almost certainly to be judged upon such considerations because we have no way of measuring the degree of toxæmia caused by absorption from the peritoneal surfaces or intestinal lumen. Without a technique for investigating such problems we cannot, for example, claim that enterostomy diminishes the amount of toxic substances circulating in the blood. Clinical impressions of the course of appendicitis in patients with enterostomy may well be erroneous because we have no means of evaluating the primary degree of peritonitis. Probably most surgeons would agree that the difference between the course of the disease in those with an enterostomy and those without an enterostomy is in no way striking, and many would say that it is difficult to detect. But if there is a definite feeling that good results may arise from drainage of the intestine, despite its many disadvantages, there is obviously a case for testing this method by such clinical observations as we are able to make.

FOUR PHASES IN SYPHILIS

THE differentiation of the venereal diseases from each other took long to achieve. At the end of the eighteenth and first half of the nineteenth century the views of medical authorities on their nature and the degree to which they were spread by contagion were so hopelessly confused that syphilis and soft chancre and even gonorrhœa were not really defined as separate entities, and the "mercurial disease" was regarded as a far more serious condition than the symptoms for which the metal was prescribed. Even such a careful observer as JOHN HUNTER (1728–93) is said to have regarded gonorrhœa, syphilis, and soft chancre as the same, and to have denied the existence of visceral, tertiary, and hereditary manifestations. The whole tendency at that time was to belittle the effects of venereal infection and it is to the strenuous efforts of PHILIPPE RICORD (1800–89) that we owe the clear conceptions that have been established and have persisted almost unchallenged to the present day. As a result of his clinical and pathological studies he wrote a book, "Leçons sur le Chancre," which appeared in 1858, in which he formulated the doctrine that "le drame de la syphilis se divise naturellement en trois actes ou périodes . . ." Rightly or wrongly this doctrine has now held sway for some 80 years and has proved its value both as a basis for teaching and in planning and conducting treatment. Prof. JOHAN ALMKVIST of Stockholm has challenged[1] this classical conception of the pathology of syphilis. His argument is based almost entirely on histological studies to which he has devoted a large measure of his spare time since his appointment to the professorial chair in Stockholm in 1911. These investigations have led him to formulate certain precepts, which he sets out and supports with a wealth of illustrative photomicrographs. He claims that in each kind of tissue spirochætes bring about a histological reaction which is characteristic of the tissue in question, but different from the reaction produced in other tissues. The changes attributable to the syphilitic process in each kind of tissue are, according to ALMKVIST, uniform throughout the whole course of the disease; they are the same in recent and in old-standing syphilis, and cannot be separated into three stages. Further, the different clinical manifestations of the syphilitic lesions are not due to differences in the reactions between the spirochætes and the tissues, since the tissues react uniformly throughout the whole course of the disease; but rather to such factors as the varying location of the spirochætes, differences

[1] *Acta derm.-venereol., Stockh.* 1937, **18**, Fasc. 1; *Brit. J. Derm.* 1937, **49**, 1.

in the degree of immunity, toxin-antitoxin reactions, nutritional disturbances, and so forth.

ALMKVIST postulates that broadly speaking there are only two types of reaction to the spirochæte demonstrable by microscope—proliferative and degenerative. In the epidermal layer there is a proliferation of new cells of the same type as the mother cells, with resultant hypertrophy of the rete Malpighii and the interpapillary epithelial processes, which is the process mainly responsible for the initial chancre. The connective tissue responds similarly, but here we find a more varied microscopic picture, for new cell elements—plasma cells, round cells, and lymphocytes—make their appearance, and the resulting histology is therefore not always the same. For this type of reaction ALMKVIST proposes the term "infiltration," and as connective tissue is more widespread than any other in the body, we find it, as we should expect, the commonest of all syphilitic processes throughout the entire course of the disease. Lymphatic vessels and blood capillaries are similarly stimulated to proliferate, but the specialised and more highly organised cells, such as the nervous, muscular, hepatic, and renal, cannot do so. Their connective tissue framework will react as described above; they themselves however in course of time, either in response to the toxic effects of spirochætal invasion or as a result of circulatory deprivation, undergo "late degenerative alterations." Infiltrative and degenerative changes are similarly observed in the walls of the larger blood-vessels and may later account for the symptoms of aneurysm and arterio-sclerosis. Two other subsidiary changes have to be noted—the pustular and necrotic. The pustule is less commonly met with than formerly. It is never a primary reaction but always occurs in previous infiltrations of the connective tissue. When well developed it is the histological background of so-called malignant syphilis. Necrotic changes are similarly superimposed. In his conclusions it would seem that ALMKVIST is still inclined to favour a phase or period progress of the disease. In place of the established division into three stages he now proposes a classification on a "real pathological basis" into four stages:

1. Initial or humoral stage, when the spirochætes are in the blood (the disease is held to be "constitutional" from the outset) and other fluids, and in the chancre. In this stage therefore are included the former primary and secondary periods of Ricord, with chancre, fever, splenic enlargement, albuminuria, and so forth.

2. Hæmatogenous syphilis. All the organs and tissues, especially the lymph glands, are now invaded by the spirochætes conveyed to them by blood or lymphatic channels. (It seems to us that this phase on the author's own showing is practically the same as the preceding.)

3. Serpiginous or creeping syphilis. From a former "infiltration" as a focus, the spirochætes creep or insinuate themselves into the interstices of tissues in their neighbourhood, initiating visible cutaneous changes, and hidden transformations at a deeper level. Clinical examples of the former are the old tertiary circinnate syphilide, the condylomata, and various forms of rarer occurrence—e.g., impetiginous syphilide of the scalp, pustular syphilides, and gummata, which may be either superficial or deep.

4. Late degenerative syphilis, in which are included all the various forms of cerebro-spinal lues—tabes, G.P.I., and so forth—and the vascular lesions which develop in the walls of the larger blood-vessels.

The new conception excludes such theories as the allergic of von Pirquet as applied to syphilis and according to ALMKVIST renders the three-stage doctrine of RICORD no longer tenable. Time will show whether these elaborate histological studies will prove a sufficient reason for so radical an alteration as is proposed, especially in view of the fact that on the author's own showing phase 2 differs very little from phase 1. There can be no doubt, however, that that histological approach is one to which insufficient importance has been attached in the past and that the new ideas elaborated on this foundation by ALMKVIST will materially assist the labours of those engaged on the many problems of prognosis and treatment in all parts of the world.

IS PASTEURISATION HARMFUL?

It remained a very good beverage, but it did not remain milk. . . .

THUS Lord CRANWORTH in the Lords' debate on pasteurisation reported in our last issue; his opinion was forcibly supported by the Bishop of NORWICH when the debate was resumed (see p. 1196) and is widely shared in the medical profession. But how far is it justified? Of the published evidence very little is convincing and much is contradictory. In elaborate experiments[1] at the National Institute for Research on Dairying rat families tended to die out on a diet of sterilised milk (and biscuits), while those on pasteurised milk showed some inferiority including signs suggesting deficiency of vitamin B_1. Such results, however, require very cautious application to human nutrition, and it will be easier to form a judgment from the more comprehensive inquiries lately made at the same institute, and at the Rowett Institute, on behalf of the Milk Nutrition Committee which was established in 1934 with Lord Astor as chairman. The object of these inquiries[2] has been to determine the effect of commercial pasteurisation on the various constituents of milk and also to decide whether a pint of pasteurised milk is equal to a pint of raw milk from the nutritional standpoint. Their answers[2] are that the changes caused by pasteurisation are not serious. Thus moderate heat does not (as has been alleged) affect the nutritional availability of the calcium and the phosphorus, or the biological value and true digestibility of the nitrogen. Neither vitamin A nor its precursor carotene is damaged by pasteurisation. There is some loss of vitamin B—probably in the B_1 fraction—and about 20 per cent. of the vitamin C disappears if (as is usual) the milk has been exposed to light before heating. The committee does not propose to discuss the bearing of these laboratory results on human nutrition until it has published complementary observations on calves and schoolchildren. But they already show that milk suffers no damage by pasteurisation that is important, compared with the risks of drinking it raw.

[1] Mattick, E. C. V., and Golding, J., *Lancet*, 1931, **1**, 662; 1936, **1**, 1132; 1936, **2**, 702.

[2] Milk and Nutrition. Part I: Effect of Commercial Pasteurisation on the Nutritive Value of Milk, as determined by Laboratory Experiment, 1937. Obtainable from the National Institute for Research on Dairying, Shinfield, Reading. Pp. 67. 2*s*. 6*d*. By post 3*s*.

ANNOTATIONS

PERSPECTIVE AND POISE IN PRACTICE

PERSPECTIVE—defined by Webster as the capacity to view things in their true relations or relative proportions—was the text of the annual oration delivered before the Medical Society of London last Monday by Dr. R. A. Young. He said that his interest in perspective as applied to medical problems had been stimulated many years ago by the assessment of a distinguished physician by one of his pupils, himself a man of great practical ability. The pupil had summed up the teacher, for whom he had a real admiration, as having "very wide range but no perspective": a man, that is, whose standards of the relative importance of details were often faulty. His opinion on a case was learned, but unhelpful in practice; he could not see the wood for the trees. In medicine as an art, said Dr. Young, we want an horizon and the idea of a vanishing point, or at any rate a point of focus. He dealt in turn with perspective in anamnesis and examination, in diagnosis, in prognosis, and in treatment, ending with some wise comments on the value of poise in a physician. Only an "i," he declared, distinguishes poise from pose; but it is a capital "I," for while the poseur is an egotist, the man with poise is usually a philosopher and often an altruist. Dr. Young had but little praise for the physician who concentrates at once on the establishment of what appears to be an obvious diagnosis, neglecting the routine review of all the systems that may reveal an essential if unexpected feature. Specimens, including human ones, are best surveyed under the low power of the microscope to get a general impression, before using the high power to focus details and refinements. In diagnosis also it is essential to remember the variations in interpretation of observed data. Too often an attempt is made to fit subsequent developments to the original diagnosis, even if they seem to contradict it, instead of starting again, regarding the problem as a fresh one, and looking at it from a different standpoint. A building situated half-way up a hill looks very different when seen from above and from below; everything depends on the point of view. A double or composite diagnosis in a difficult case is always suspect—like a picture with two horizons it is usually out of drawing.

In Dr. Young's experience, physicians with great experience of post-mortem work rarely make "tall" diagnoses. Knowledge of the distribution of the effects of disease tends to increase clinical acumen and the modern tendency in aspirants to hospital posts to escape a period of apprenticeship in routine post-mortem work is, he finds, to be deplored. Prognosis depends upon many factors, some capable of statistical expression, others almost imponderable. The individual experience of the practitioner is liable to influence his opinion more than any numerical statement of the probabilities based on figures. That it is wise to remain hopeful even if the outlook is grave, and if possible to infuse that hopefulness into the patient and those around him, is a lesson which Dr. Young learnt from his seniors, notably Dr. G. F. Still and Sir James Goodhart. This Dr. Young has confirmed for himself, and passes on the knowledge with conviction. Even when faced with an obviously lethal disease, for example, malignant disease of the bronchi or mediastinum recognised at a time when eradication or even prolonged arrest is improbable, he has been impressed with the fact that the patient rarely asked a direct question. He suspects his fate but does not want to have his suspicions confirmed.

Among the orator's sagacious precepts the following are noteworthy. The reminder that there are fashions in treatment is timely; the three "good remedies out of fashion" (antimony, apomorphine, and aconite) quoted by Dr. Young, using only the first letter of the alphabet, suggest that the list might reach formidable dimensions before one reached the last. In the choice of new remedies he noted the danger of mistaking enthusiasm for experience, a danger to which the specialist without general knowledge is peculiarly liable. It is still true that they that are sick need a physician, that is, *one* person in charge of them even though he calls in specialised help in diagnosis and treatment where necessary. In the medical curriculum the specialised teaching and examination now in vogue in all departments needs overhauling and close scrutiny with a view to simplification. The paradox, that whereas the doctor as an individual is trusted, the medical profession as a whole is not in great favour, is attributed by Dr. Young partly at least to our traditional refusal to advertise, and is to this extent irremediable without the loss of something far more valuable than popularity. In time the public may learn to understand that it is for their protection rather than for the physician's that the code of reticence has been developed.

SURGERY IN OLD AGE

THE ageing of the population, consequent upon a declining birth-rate and an increasing expectation of life, will inevitably have its effect in many economic and social aspects of life. Not least will be its reactions on the practice of medicine. Obstetricians and pædiatricians must be increasingly affected by the reduction in the number of births and of children; the physicians may expect an increase in the incidence of the degenerative diseases, of cancer and of diabetes; and the surgeons a general increase in the demands made upon them, though probably not equally distributed among the various surgical specialties. There is a popular belief that advanced age is a strong argument against operative treatment, and if in the future an increasing proportion of old people is to be the material upon which the surgeon must work it is clearly important to know how far there is justification for that belief. Starting from these tenets, Dr. Barney Brooks, of the department of surgery in the Vanderbilt University School of Medicine, Nashville, Tennessee, has made a study of the results of operations performed in that hospital during 1926 to 1935 on 287 patients over 70 years of age.[1] All of these patients except two had been traced until the date of death or to 1936. The results he reaches are interesting. Of 172 operations carried out at ages 70–74 years, 17, or 9·9 per cent., resulted in death in hospital; of 84 carried out at ages 75–79 there were 13 such deaths, or 15·4 per cent.; and of 37 at ages 80 and over there were 6 deaths, or 16·2 per cent. Surgical diseases in these high age-groups are clearly associated with a relatively high fatality, but from the protocols of the conditions and causes of death in the patients who succumbed, which are given in detail, Brooks concludes that deaths which could be reasonably attributed to the operative treatment are remarkably infrequent. In other words, increasing the proportion of patients in the higher age-groups would undoubtedly increase the

[1] *Ann. Surg.* April, 1937, p. 481.

hospital mortality-rate but should not increase the hazard of operative treatment. Further evidence is afforded by those groups of patients in which operation was undertaken solely for the relief of some distressing symptom which presumably would not necessarily decrease life expectancy—i.e., reducible hernia, cataract, tic douloureux, gall-bladder disease without gangrene or perforation, and benign abnormalities of the rectum. There were 90 such cases with only one death, from coronary occlusion on the seventh day after operation. Most hospital deaths fell in the genito-urinary and abdominal operative groups, the results with the latter being the most discouraging though none of the deaths could be directly attributed to the operation. One death has a particular bearing on the subject of the paper. The patient was first seen in 1925 with gall-bladder disease but because of age, hypertension, and cessation of symptoms operation was not advised. The attacks recurred until 1927 when operation was unavoidable but the gall-bladder was then found ruptured into the duodenum and the patient died. Given a proper technique for handling sick old people—an atmosphere of optimism, precautions against exposure to acute respiratory infection, and pre-operative treatment for existing disease of the heart and kidneys—Brooks finds no strong argument against operations in old age.

THE ROCKEFELLER FOUNDATION

WE have recently been reminded of the benefactions of the Rockefeller Foundation by a resumption of their policy of making travelling fellowships available for medical men and women in this country on the recommendation of the Medical Research Council. Since 1915 a sum of nearly four million pounds has been spent on fellowships in various subjects all over the world. In a review for 1936, Mr. Raymond B. Fosdick, the president of the Foundation, makes it clear that fellowships, valuable though they are, form but a small part of its activities. The Foundation, which has been in existence since 1913, has for its aim "the promotion of the well-being of Mankind throughout the world," and in support of this ambitious programme it has an annual income of some £2,360,000. This vast sum is expended in financing research, about two-thirds being spent in the U.S.A. and the remainder in all parts of the world. The subjects chosen are those which, in the opinion of the trustees, are likely to be of benefit to mankind as a whole and include investigations into problems of public health, medicine, natural science, the social sciences, and the humanities. In general the Foundation acts by financing existing institutions but in the realm of public health it undertakes research on its own account, appointing both laboratory and field workers and concentrating its attentions on those non-preventable diseases which offer reasonable prospects of being made preventable. In 1936 investigations were in progress in the U.S.A. and some 41 other countries into yellow fever, malaria, yaws, schistosomiasis, rabies, influenza, and the common cold. In medicine the Foundation's workers are mainly engaged on the problems of mental hygiene as being, says Mr. Fosdick, "the most backward, the most needed and potentially the most fruitful field in medicine to-day." Some £339,000 was expended in this direction in 1936, including grants to the Galton laboratory and the Maudsley Hospital in London. Mr. Fosdick also remarks, and one may well agree with him, that if a foundation is looking for immediate results the field of mental hygiene is not the one to enter. The natural sciences are represented in the Foundation's programme by experimental biology. For research, especially in genetics, endocrinology, and on the enzymes, grants of £285,000 were made in 1936. The social sciences and the humanities, which receive a very small share of the world's expenditure for research in general, received grants of £970,000. Since 1933 the Foundation has taken under its wing 151 scholars dismissed for political reasons from their posts in Germany and has contributed £110,000 towards the salaries of these unfortunates who have found employment elsewhere.

FAT EMBOLISM

THE fat of the body exists as an emulsion of very fine particles in the plasma and as deposits of coarser substance in subcutaneous tissue, around the kidney, and in the marrow. It is, theoretically at least, possible for trauma to release the depôt fat from its encapsulation and lead to its absorption into the lumen of damaged blood-vessels (veins). It has been considered likely that the veins of the Haversian systems, being held patent by their bony surroundings, are particularly suited to injection with fat emboli. There are certain practical difficulties in accepting this explanation. The first is that for fat embolism to occur it is not essential that the bone should be broken. Manipulation of old contracted rheumatoid joints has been followed by death, and autopsy has shown extensive pulmonary fat embolism. Even in the cases—much the most numerous—in which there is a fracture, the severity of the lesion bears no relation to the production of the condition. The only fact about fat embolism that seems to be well established is that in its severe form it is always the result of trauma received before death. This conclusion was reached by Vance in 1931 [1] as the result of an investigation of 246 autopsies. A slight degree of fat embolism may be present in non-traumatic cases but is probably not of clinical importance. It is as a sequel to fractures of the long bones that most cases of fatal embolism have been recorded, and the natural assumption has been that the emboli are derived from the fat of the marrow. Watson [2] records a fatal case which occurred in conjunction with a serious injury—a compound fracture of the tibia—that required an emergency operation; there was comparatively little comminution of the bone. Other cases have been reported following simple fractures. Another difficulty in accepting the bone-marrow as the source of the fat is that the amount of fat available in the medullary cavity of a long bone probably is insufficient to cause any serious degree of fat embolism. The mechanism of the absorption of the fat—whether by suction into the veins, or by pressure from the congested tissues—is also a matter of debate.

Watson notes that the anæsthetic was not an easy one, and that a considerable quantity of ether was administered; he suggests the possibility that the ether may dissolve the fat of the blood plasma, which may then be precipitated by evaporation of the ether in the lungs. A further suggestion made is that the products of tissue destruction circulating in the blood may break up the fat present in the plasma as a very finely divided suspension, and cause it to form particles large enough to block the capillaries. However formed, the fat emboli seem to pass first to the veins, thence to the right side of the heart, and so to the pulmonary circulation. Access of the fat to

[1] Vance, B. M. (1931) *Arch. Surg.* **23**, 426.
[2] Watson, A. J., *Brit. J. Surg.* April, 1937, p. 676.

the systemic circulation is more difficult to explain. It may traverse a patent foramen ovale, or it may actually pass the barrier of the lung capillaries.

Two main clinical types of case are recognised: in the pulmonary type the first symptom may be precordial pain, or a feeling of constriction round the chest; a cough develops, the sputum being often streaked with blood, and moist râles are heard. Occasionally the progress is very rapid, with acute œdema of the lungs; more often it is gradual and at first broncho-pneumonia may be diagnosed. The cerebral type of embolism tends to mimic delirium tremens. Death is by coma. Certain organs such as the kidney seem to be unaffected by the fat in the capillaries; in the brain the grey matter is not seriously affected, but hæmorrhages are found in the white matter, with areas of necrosis and of inflammatory reaction. Fat appears in the sputum and in the urine. Pyrexia is usual. The symptoms occur early—i.e., within two or three days of the accident or manipulation. In Watson's case pulmonary and cerebral symptoms were combined. The first symptom was cough and "rusty" sputum, precordial pain followed, and twelve hours later the patient was comatose. Apart from avoidance of ether anæsthesia no very useful suggestions have been advanced for prevention of fat embolism. Once the condition has developed there is no generally accepted method of treatment, though various measures have been recommended.[3] The condition is not necessarily fatal.

OXFORD MEDICAL GRADUATES AND THE UNIVERSITY APPEAL

AT a meeting of Oxford medical graduates recently held in London to consider how they might best assist the Oxford University appeal, the opinion was expressed that many medical graduates would like to be associated in any contribution which they might make towards the appeal. It has therefore been arranged that a special fund will be opened to include the contributions from all medical graduates who may so desire it, the names of individuals being of course retained. It is felt that, in this way, the medical graduates of Oxford will be able more adequately to express their gratitude to their University and their desire to come to her assistance. Sir Farquhar Buzzard, president of the Oxford Graduates' Medical Club, writes in the following words of such a combined effort on the part of Oxford medical graduates:—

"So long as the university was devoted in the main to the study of the humanities she was sufficiently well endowed to supply the books and the teachers necessary for these subjects, but during the last 70 years she has been obliged, in order to keep pace with modern developments, to spend more and more money on education and research in scientific and sociological branches of learning, with the result that she has now found herself unequal to the consequent financial burden. We medical graduates recognise, perhaps better than others, how inevitable these expenses are if any institution is determined to fulfil its obligations in contributing to the advance of knowledge and in keeping its place among its rivals. As undergraduates we were apt, perhaps, only to regard our colleges as our creditors; as graduates we cannot forget what we owe to our university for affording us the opportunity of sitting at the feet of men like Henry Acland, Burdon Sanderson, Arthur Thomson, Francis Gotch, Georges Dreyer, William Osler, and Charles Sherrington—to mention only a few of those to whom we must always remain deeply indebted. Now is our opportunity to show that we are not forgetful of what our old university did for us in our younger days and to give every assistance in our power to continue her great work for those who are succeeding us. Lord Nuffield, with no such obligations as ours, has endowed with unrivalled generosity a new school of medical research, and, recognising that this must increase rather than decrease the university's financial responsibilities, has already given £100,000 in response to her public appeal for money. The least we can do is follow this generous and far-sighted example to the best of our abilities and resources."

Sir Farquhar backs his views in practical manner by an offer to start the combined effort of the Oxford medical graduates with a donation of £50.

POST-MORTEM FINDINGS IN KENYA

A VALUABLE pioneer effort has been made by F. W. Vint[1] in summarising the findings in 1000 consecutive post-mortems on bodies of natives of Nairobi, Kenya Colony. Pneumonia was found to be the most frequent cause of death, accounting for 298 out of the 1000. The right lung was attacked most commonly, usually the upper lobe. Only 6 of these patients were under ten years old. Tuberculosis was the next in order of frequency, the lungs being affected in 94 per cent. of the 132 cases. A hundred deaths were ascribed to septicæmia and toxæmia. Only a few (26) deaths were due to malignant disease, primary cancer of the liver being rather frequent (8). Spleens were found to be large and fibrotic, whether the cause of death was malaria or not. The interesting conclusion reached by the author—namely, that infective disease tends to be septicæmic among the natives owing to blockage of the reticulo-endothelial system and diminished kidney function—would seem to demand further experimental and histological evidence; his article should stimulate work on this important subject.

TARSAL SCAPHOIDITIS

Smets[2] draws a distinction between Köhler's disease proper and Köhler's disease with complications, the distinction being that only those cases that are complicated give rise to symptoms. His contention is that the radiographic appearances characteristic of Köhler's disease are in fact variations of normal ossification. The condition shows a strong familial tendency and has been observed in uniovular twins; thus among triplets the uniovular pair were affected while the other escaped. The case is quoted of a doctor whose son had Köhler's disease with symptoms and whose daughter on radiography proved to have similar changes without symptoms. Many cases have been discovered accidentally during routine examination of the foot for other causes—such as a search for foreign bodies, or a fracture—and Smets emphasises once more the fact that at least 30 per cent. of cases are bilateral, though the condition may be painful only on one side. Furthermore, he draws attention to the frequent association of Köhler's disease with identical changes in the patella. While not denying that an infective process such as tuberculosis may give rise to similar appearances, Smets mentions one or two interesting cases in which a tuberculous scaphoid on one side, confirmed by the formation of a cold abscess, with an X ray appearance suggestive of Köhler's disease, was associated with typical changes, without symptoms, in the other foot. Here it is possible, he suggests, that the tuberculous disease was an added infection. He discards trauma entirely as an important cause, but

[3] Clark, G. Norman (1933) *Lancet*, **2**, 77.

[1] *E. Afr. med. J.* February, 1937, p. 1.
[2] Smets, W. (1936) *J. Chir., Bruz.* **7**, 377.

suggests that the scaphoid going through this variation of normal ossification may perhaps be more vulnerable at a certain stage and therefore more susceptible to the influences of minor traumata; hence the symptoms.

THE CAPITATION FEE

THE Panel Conference having last year declared that 9*s*. is too small a capitation fee for insured persons, and the Minister having said he thinks it may well be too much, arrangements have now been made for arbitration. The arbitrators, constituted as a court of inquiry, are Lord Amulree (chairman), Mr. Thomas Howorth, and Mr. D. H. Robertson, with Mr. E. H. Phillips of the Ministry of Health as secretary. Their task is to advise what, if any, alteration should be made next January in the capitation fee, "having regard to any changes which may have taken place since 1924 in the cost of living, the working expenses of practice, the number and nature of the services rendered by insurance practitioners to their insured patients, and other relevant factors." The inquiry is to proceed on the assumption that employed persons under 16 years of age will by that time be entitled to medical benefit; and the arbitrators' findings should help to resolve the conflict of opinion that has arisen from the Minister's belief that a substantially lower fee should be paid for children than for adults.

MENINGOCOCCAL MENINGITIS TREATED WITH SULPHANILAMIDE

SULPHANILAMIDE, as *p*-aminobenzenesulphonamide is conveniently called, has been proved lethal to meningococci,[1] and accounts on its use in cerebro-spinal fever are eagerly awaited. A small series of cases now reported from Baltimore is encouraging so far as its goes. Schwentker, Gelman, and Long[2] have treated 10 patients with meningitis and 1 with meningococcal septicæmia—the series being to all intents and purposes consecutive—and are able to record recovery in all but 1 of them. They used a physiological solution of sodium chloride containing 0·8 per cent. of sulphanilamide, and they gave it by intraspinal and subcutaneous injection. They began by withdrawing cerebro-spinal fluid and replacing it with the sulphanilamide solution, the amount injected varying from 10 to 30 c.cm. and usually being 5 to 10 c.cm. less than the amount of fluid withdrawn. A larger quantity of the solution was then given subcutaneously; they injected about 100 c.cm. for each 40 lb. (18 kg.) of body-weight. Both intraspinal and subcutaneous injections were repeated every twelve hours for the first two days, and once daily thereafter until definite improvement was evident. Sometimes the cell count of the cerebro-spinal fluid fell rapidly and progressively; sometimes it remained high for a few days and descended precipitately. In no case could organisms be found in the C.S.F. more than three days after treatment started. No untoward effects were noted: the subcutaneous injections gave no more reaction than would be expected with normal saline, and there were none of the signs of systemic reaction sometimes reported after sulphanilamide, such as rashes, methæmoglobinæmia, or sulphæmoglobinæmia.[3] Schwentker and his colleagues are rightly cautious in their conclusions, but in their 11 cases they found the therapeutic response "quite comparable to that which usually follows treatment with specific antiserum," and they point out that sulphanilamide has the substantial advantage over serum that it does not cause irritation like a foreign protein.

[1] Buttle, G. A. H., Gray, W. H., and Stephenson, D. (1936) *Lancet*, **1**, 1286; Proom, H. *Ibid*, Jan. 2nd, 1937, p. 16.
[2] Schwentker, F. F., Gelman, S., and Long, P. H., *J. Amer. med. Ass.* April 24th, 1937, p. 1407.
[3] See paper by Paton and Eaton on p. 1159 of our present issue.

RISKS OF ENDOTRACHEAL ANÆSTHESIA AND OF EXPLOSIONS

A CONTROVERSY has been going on in the last two numbers of the *British Journal of Anæsthesia* over the possible dangers of nasal endotracheal methods. Dr. Massey Dawkins in January asserted that bacteria lie within the external nares whence they are normally removed by ciliary action. The nasal catheter, he thinks, may carry these organisms directly to the trachea where they may not be effectively dealt with. He quotes two fatal cases of broncho-pneumonia following endotracheal anæsthesia, which he believes illustrate and support his contention, and he also produces statistical evidence. His opinion is that "administration of an endotracheal anæsthetic for every case is becoming too common," though he does not deny that the method is "certain, easily controllable and admirably suited to the needs of the surgeon and of the anæsthetist." The cudgels in defence of nasal endotracheal methods were taken up in the April number and wielded with vigour. Dr. Ivan Magill, who was the originator of this method and has employed it since 1919, has not yet met an instance of pulmonary complication that could justly be attributed to it. He holds that any bacteria present in the nose are probably already present in the trachea too. He agrees with Dr. Dawkins that "indiscriminate use of the endotracheal method by all and sundry, whether indicated or not, is to be deprecated." Mr. W. A. Mill suggests that the best way to avoid lung complications is to avoid operating until some time has elapsed after any acute infection of the upper respiratory tract. Cocainisation of the nares, the use of a small tube, an anæsthesia deep enough for insertion of the tube without spasm of the cords, and lubrication of the tube are features of the technique which other writers to the journal regard as important.

Another paper in the April number, by Mr. J. H. Coste, F.I.C., deals with the cognate question of fire and explosion in operating theatres. It is a valuable contribution because other investigators have usually given primary consideration to the source of the spark or flame which starts an explosion. Mr. Coste, examining the chemical aspect, has experimented on the explosibility and inflammability of a number of the commonly employed inhalation anæsthetics. He gives numerous details and as regards ether draws the important practical conclusion that "explosions due to dangerous concentrations of ether in the air of an operating theatre . . . are most unlikely if the possible source of ignition is a foot or more above the floor level. . . ."

CEREBRO-SPINAL RHINORRHŒA

CEREBRO-SPINAL rhinorrhœa if rare is a serious condition since it carries with it the danger of meningitis. Diagnosis is easy if the possibility is not forgotten: profuse flow, or free dripping of a clear fluid which does not stiffen on the handkerchief is a characteristic sign, confirmed when chemical examination of the fluid shows absence of albumin and mucin and the presence of glucose. The cases fall into three groups: (1) those due to injury, (2) those

which follow operation on the frontal sinuses or ethmoid region, and (3) those which occur without previous traumatism. On May 7th, in a communication to the laryngological section of the Royal Society of Medicine, Prof. Hugh Cairns described eight cases illustrating these various groups. Two were the result of airplane crashes, where the face had come into violent contact with the instrument-board, causing fracture of both walls of the frontal sinus. Mr. Cairns suggests that such accidents may become increasingly frequent. In both subjects rhinorrhœa ceased after a few days and recovery followed. In these cases early operation is contra-indicated, for severe shock is usually present as well as infected wounds of the neighbouring regions. In other cases rhinorrhœa may not appear for several weeks; if it persists, there is considerable risk of meningitis through infection from the nose, which may occur at any time as the result of a cold. It is therefore wise to operate, expose the floor of the anterior cranial fossa, and close the rent in the dura by suture or by a fascia lata graft.

If a flow of cerebro-spinal fluid is seen during an intranasal operation on the ethmoidal region, it means that the dura mater, which is particularly thin and adherent here, has been torn. The danger of fatal meningitis is extremely grave, and the safest course is to open the anterior fossa at once and repair the wound. Mr. W. M. Mollison pointed out, in the ensuing discussion, that injury to the dura during external operations on the frontal sinus and ethmoids is less liable than injury during intranasal operations to be followed by meningitis.

Cerebro-spinal rhinorrhœa in the absence of traumatism is sometimes associated with hydrocephalus or with cerebral tumour, and may cease after removal of the latter. Sometimes it is more truly spontaneous, and is then probably due to congenital defect in the region of the cribriform plate. StClair Thomson first called attention to this condition in 1899, when he had seen three cases, all ending fatally, and remarked that the condition does not appear to be amenable to any treatment.[1] In view of the serious risk of meningitis, probably the safest course is to expose the anterior fossa and close the gap with a graft, especially where a deficiency in the bone is shown by X ray examination.

ROYAL SOCIETY OF MEDICINE

ON May 10th the Royal Society of Medicine gave a reception at the Society's house to celebrate the Coronation and to entertain medical men and their wives from overseas. The guests were received by the president, Sir John Parsons, F.R.S., and Lady Parsons in the library. A film show in the Barnes Hall was preceded by a short speech in which the president extended the hospitality of the Society to all visitors and welcomed guests. Among the official guests were Mr. James Davies, Commissioner for Newfoundland, Sir Thomas Barlow, president of the Royal Medical Benevolent Fund, Sir Edward Mellanby, secretary of the Medical Research Council, and the presidents of many of the sister medical societies which have their headquarters in London; there were also visitors from Australia, New Zealand, Canada, Africa, India, Malta, New York, Straits Settlements, Palestine, and Greece. By the courtesy of the General Post Office two excellent films were shown. The first, "Weather Forecast," demonstrates how from meteorological data collected from all over Europe a gale is forecast; one follows the "gale warning" through all the departments concerned and finally sees in outdoor scenes the gale rise and pass away. In the second, "Night Mail," are recorded the various stages of the mail as it flies north through the night on a special express, and there is an exciting moment when the mail from Holyhead nearly misses its connexion. A third film, "Galatea," by Miss Lotte Reiniger, was a clever silhouette made up with pieces of paper and cardboard, the subject matter of which had been freely adapted from the classics.

An exhibition of historical interest followed, consisting of tableaux depicting medieval alchemist shops and the progress of medical science through the centuries. The tableaux were lent by the Wellcome Historical Medical Museum as were a collection of figures of the patron saints of medicine, including Saint Sebastian, the patron saint of undertakers. Altogether a successful and entertaining evening.

THE HONOURS

THE Coronation honours list is for the Empire as well as for this country, and it brings recognition to many whose work is done in out-of-the-way places. Medicine in England gains another able exponent in the House of Lords in Dr. Christopher Addison, whose long parliamentary service and tenure of several ministries are fittingly recognised by a peerage. Sir Cuthbert Wallace receives a baronetcy; Dr. Edward Mellanby is created K.C.B.; Dr. G. F. Still and Sir John Atkins become knights of the Royal Victorian Order; and Dr. A. F. Hurst, Prof. Beckwith Whitehouse, and Dr. A. E. Horn are among the new knights bachelor. To these and the other members of the profession named on p. 1204 we offer warm congratulations. In addition, there are many associated with medical work whose decorations we are also glad to note. Mr. S. P. Vivian, the Registrar-General, receives a knighthood; Mrs. Ellen Pinsent, late senior commissioner of the Board of Control, is made a dame of the Order of the British Empire; and the nurses honoured include the matrons of St. Bartholomew's and King's College Hospitals, Miss Helen Dey and Miss M. A. Willcox, who become officers in the same Order.

THE next session of the General Medical Council will open on Tuesday, May 25th, at 2 P.M., when Sir Norman Walker, the president, will deliver an address.

ON March 6th we reviewed the report of the Select Committee on Medicine Stamp Duties which proposed the taxation of a large range of preparations recommended or advertised as curative or preventive of illness. This report is now published by H.M. Stationery Office with the minutes of evidence and an index. The price is 7*s.* 6*d.*

THE centenary celebrations of the Liverpool Medical Institution will be held on May 30th and 31st and June 1st, when honorary memberships will be conferred on Sir Cuthbert Wallace, Sir Norman Walker, Sir Farquhar Buzzard, Sir Ewen Maclean, Prof. W. Fletcher Shaw, Sir James Barr, Mr. Thurstan Holland, and Mr. Frank Paul. Prof. R. E. Kelly will deliver a presidential address on surgery a hundred years ago. During the meeting the Hugh Owen Thomas and Robert Jones memorial library of orthopædic surgery will be opened and afterwards Mr. W. Rowley Bristow will give the Hugh Owen Thomas memorial lecture.

[1] Diseases of the Nose and Throat. Third edition. London, 1926, p. 213.

SPECIAL ARTICLES

EMPIRE CONFERENCE ON THE CARE AND AFTER-CARE OF TUBERCULOSIS

(*Concluded from p. 1131*)

Lord HORDER and Lord ALLEN OF HURTWOOD presided over the sessions of this congress on May 4th. Lord Horder said that despite the advance made against tuberculosis the mortality remained far too high. Lord Allen, referring to the Papworth experiment, said it interested him because of the humaneness and sympathy it brought into administration. One of the major needs of democracy, he thought, was emphasis upon the humane.

TUBERCULOSIS IN THE BRITISH ISLES

Various papers were read describing work being done in the home countries.

Dr. D. A. POWELL (principal medical officer, Welsh National Memorial Association) said that the fall in the tuberculosis death-rate in Wales, though substantial, had not been as great as in England. This fact must be connected with the national characteristics of the Welsh, such as the intense conservatism of their social habits, the closeness and tenacity of their family relationships, and their fatalistic outlook. In Wales, broadly speaking, families were either free from the disease or were riddled with it; and it ran in families because of excessive opportunities of infection rather than because of hereditary lack of resistance. So closely woven were town and country that in dealing with a chronic infectious disease such as tuberculosis, Wales had to be looked on as a unit. The main services undertaken by the Association included: (1) the provision of institutional treatment in sanatoriums and hospitals; (2) the provision of dispensary or out-patient treatment, for which purpose Wales was divided into 14 areas which disregarded when necessary local government administrative boundaries; (3) the establishment of clinics for the continued treatment and supervision of surgical cases; (4) the establishment of an educational department; (5) after-care; and (6) the maintenance of a central research laboratory. The liaison between the institutional and the dispensary sides was extremely close—administratively through the head office and the principal medical officer, and clinically through interchangeability of staff, the appointment of tuberculosis officers as visiting physicians, the appointment of medical officers of surgical institutions as officers in charge of the surgical after-care clinics, the carrying out of joint investigations such as that into "coal-miners' lung," and the holding of periodic staff conferences. The Welsh National Memorial Association was unique in that it combined the advantages natural to a voluntary organisation with those inseparable from a State and rate-aided service.

Dr. ERNEST WATT (Department of Health for Scotland) said that in Scotland there was now, roughly, 1 bed per 900 of the population, but even now there was often a waiting list. A great deal had been learnt about the problem of tuberculosis since the inauguration of official schemes. It was important to preserve a critical outlook upon all activities engaged in the campaign.

The MARCHIONESS OF ABERDEEN gave an account of the formation of the Women's National Health Association in Ireland in 1907, and the organisation of a travelling anti-tuberculosis exhibition which resulted in the establishment of a network of local branches of the association and a steady decrease in the tuberculosis death-rate. The rate recorded for 1936 was the lowest yet reached (1·13 per 1000) and was approximately 59 per cent. less than that for 1904. With a government grant of £25,000 two sanatoriums were established near Dublin and Enniskillen. It was not until 1929, however, that they were able to make a start by establishing the Peamount Industries and adopting the Papworth plan of working for the establishment of a village settlement. Lady Aberdeen spoke of the remarkable change of atmosphere which had been brought about during these seven years—a change that had transformed the work.

Dr. G. LISSANT COX (Lancashire County Council) described some of the measures for prevention and treatment that have been adopted in Lancashire. If treatment was over-emphasised, he said, they would have a poor scheme and faulty control. The importance of prevention was seen when it was realised that some 60 per cent. of adult pulmonary tuberculosis cases died within five years of coming under notice. The Lancashire scheme was built up on the principle of finding, isolating, educating, and treating the adult positive case. Finding had to be done by notification and by active coöperation between family doctor and whole-time municipal or State doctor. Isolation was carried out by keeping infective patients in hospital as long as they would stay. In Lancashire they had 680 beds, which was just enough for their 855 pulmonary deaths. Education was carried on by teaching in schools (incidentally all schools ought to be open-air schools), and teaching by the tuberculosis medical service in hospitals, sanatoriums, and homes of the patients. Treatment included all modern medical and surgical methods. It was always free, and Dr. Cox considered that this policy had helped to give them their reduction in incidence and fatality. Schemes for the care and after-care of the patient were an important part of treatment, and were most highly developed in the village settlement.

THE HOSPITAL AND THE VILLAGE SETTLEMENT

Dr. L. S. T. BURRELL said that when tuberculosis was recognised either as a primary infection or as a reinfection, the object of treatment was to make the lesion heal without spreading, and it was in this stage that the hospital was valuable. It was impossible to over-estimate the value of an initial period of rest in cases of pulmonary tuberculosis. When the activity of the disease was arrested the function of the sanatorium would come into play. Secondly, when the patient was so ill that he could do little or nothing for himself, he should be in hospital not only for his own sake, but also to prevent infection of others. The third great function of the hospital was as a centre for diagnosis. At the Brompton Hospital a large number of patients came merely for this purpose, and were subsequently drafted to the appropriate institution.

Dr. J. B. MCDOUGALL (Preston Hall) spoke on the re-settlement of the tuberculous ex-Service man. From their early experience of the Preston Hall scheme they had learnt that for the success of any village settlement medical principles must take precedence over every other factor in the life of the community. Another important lesson they had learnt was that the leaders of the various departments should be recruited as far as possible from the

tuberculous population. The principles employed at Preston Hall were substantially the same as at Papworth. They now had accommodation for 300 patients suffering from pulmonary tuberculosis, and treatment of every kind was available. With regard to the purely industrial side, if the products were good and the price was right, there was no reason why trading in the open market should not be as successful in a village settlement as in any outside organisation. A recent Ministry of Health report (1932) had pointed out that a subsidy to a patient in a village settlement was more economic than allowing the patient and his family to be supported, entirely unemployed, from the public assistance funds. He had often wondered what the country would be saved financially by acting on a large scale on this dictum.

SURGICAL TUBERCULOSIS

Sir HENRY GAUVAIN said that in the vast proportion of cases conservative surgical tuberculosis treatment was the treatment of choice. Occasionally radical treatment was preferable, as for example in most cases of tuberculous disease of the knee-joint in adults, where excision was very often indicated, both because duration of treatment was thereby shortened and danger of recurrence largely avoided, and also because the resulting disability was comparatively trifling, and indeed was often less than if protracted conservative treatment were employed. It might also be desirable for small tuberculous foci which could be readily and completely removed. In tuberculous disease of the spine and hip there was much controversy as to when fixation operations should be undertaken. In his own experience these operations were not advisable as a rule during active and progressive disease, especially in the presence of deformity, since deformity could nearly always be reduced or corrected during treatment. The treatment of tuberculous glands of the neck varied with the type of case, but usually a preliminary period of conservative treatment was useful, after which if necessary any hard glands remaining which were unlikely to be absorbed should be carefully excised. In tuberculosis of the abdominal glands also conservative treatment was always the method of choice and operations avoided whenever possible. The Triboulet test he thought was sometimes a useful guide to the condition of the large intestine.

EXPERIENCES IN THE DOMINIONS

Dr. R. J. COLLINS (Canadian Tuberculosis Association) said that in Canada they had no centralised —i.e., national—department of health. Each province built up its own schemes, agreeing in objectives but differing in methods. In his own province of New Brunswick special emphasis was being laid on better housing and diet, the establishment of numerous clinics, and adequate after-care. Very little constructive work had so far been done in respect of housing; otherwise the advances made paralleled those in England. The introduction of travelling clinics had done a great deal. In 1928 survey work —group examinations—had been begun with the entry classes in the universities, and this had gone on to other survey groups. These plans were duplicated more or less throughout Canada. They had an average in Canada of 1½ beds per tuberculosis death. Saskatchewan had 2 beds per death, but the maritime provinces had less financial means. With the object of shortening hospitalisation and rendering the sputum negative there had been a great increase in artificial pneumothorax treatment and thoracoplasty, and at the present time some 20 to 50 per cent. of the sanatorium population received some form of collapse therapy. There were 20 centres in New Brunswick alone for A.P. refills. The employment of ex-patients was very valuable. Occupational therapy the speaker thought rendered little service towards future employment. Vocational training could be made more effective if there was more diversity of subjects, and it should be supplemented by some scheme for the subsequent placing of the patient in sheltered employment. After-care in Canada was a problem affecting some 10 per cent. of the discharged patients.

Miss GLORIA LANGMAID (Canadian Association of Occupational Therapy) said that occupational therapy was now part of the equipment of every up-to-date sanatorium in Canada. It assisted young patients to adjust themselves to their new conditions, and aroused their interest in new directions.

Mr. D. M. DEANE described the work of the Tubercular Soldiers' Aid Society, Adelaide.

Dr. A. J. COLLINS (Commonwealth of Australia) said that notification of tuberculosis was compulsory in Australia, but the State was powerless if a man declared he could not afford to give up his work to undergo treatment. Unless financial assistance was available for their dependants, a certain proportion of tuberculous patients would not avail themselves of the necessary institutional provision. The public health officer should be empowered to insist on adequate treatment in every case.

At a subsequent session the Hon. FRANCIS GAHA (Minister of Health, Tasmania) said that the principal difficulties in Tasmania lay in organisation, transport, and public apathy. Sometimes they had to take their people as far as 200 miles away from their homes and to put them in the central institution set apart for special treatment. The patient often rebelled at being transported so far, with the result that they had been dealing with a later stage of tuberculosis than could be found in centres where clinics could be readily located. The Government was about to establish a full-time free medical service for people living in the remoter portions of the State. The medical officers were to be part of a central medical scheme run in conjunction with Tasmania's public hospitals, and were to be given frequent opportunities for refresher courses in the hospitals. A central sanatorium along modern lines was also in process of development. Where centres of population permitted, it was intended to adopt the British method of tuberculosis clinics, classification and ambulatory treatment generally. More ambulance units were to be installed to facilitate transport; health talks by radio were to be given, and elementary instruction in hygiene provided by the State schools. The speaker concluded by referring to the fundamental importance of guaranteeing to the public a pure milk-supply.

INDIGENOUS RACES

Viscount GOSCHEN took the chair at the fifth session. He emphasised the importance of a free exchange of information.

Dr. CHARLES WILCOCKS (Tanganyika Territory) gave the results of a five-year investigation of tuberculosis conducted by him in Tanganyika inhabited by some 5,000,000 natives, mainly of Bantu origin. For the tuberculin survey the Mantoux technique was used throughout, supplemented by stethoscopic examination, collection of sputum if desired, and an X ray examination of suspected cases. In 9866 such examinations 114 cases of definite tuberculosis were found, giving a crude rate of 11·5 per 1000.

In every place half or more of the adult population were positive to tuberculin, the rates for children being lower. Of X ray films of 106 unselected contacts, 16 per cent. showed definite tuberculous infiltration of the lungs. In a larger series of contacts who were tuberculin-tested 83 per cent. of all ages were positive, of whom some were contacts of non-pulmonary cases. The results of the survey suggested that continuous exposure to exogenous reinfection tended to produce first sensitivity, then hypersensitivity, and finally disease; and if the highly allergic state was harmful rather than protective, then the process might be a continuous one. The dominating factor was contact. The prognosis in native tuberculosis cases was usually bad. This might be due to late diagnosis, poor living conditions, and diet, or possibly to a racial predisposition to the disease, perhaps increased by concurrent diseases; and with better conditions and treatment an improvement might be looked for. The resistance shown by the infected natives proved that under most circumstances they could control their infection. It might take very little to increase that capacity for control, so that a repetition of the experience of the North American Indians might be avoided.

Major-General Sir CUTHBERT SPRAWSON (Indian Medical Service) said that the Indian population as a whole was more susceptible to tuberculosis than the population of Great Britain. There were also special difficulties inherent in the purdah system and the early marriage of girls, while another peculiarity of tuberculosis in India was the large proportion of cases of primary abdominal tuberculosis. Infection from the bovine tubercle bacillus, however, was believed to be rare. The dispensary system of tuberculosis control in this country presupposed existing hospital or sanatorium accommodation for all the cases the dispensary might send, but in India such accommodation did not exist. There was an urgent need for increased hospital accommodation, by which the most essential link in the chain of case disposal would be achieved. There was, also, room for a tuberculosis settlement on the lines of Papworth—i.e., an institution receiving cases of all types with its own dispensary, hospital, sanatorium, and factory. No such settlement had yet been established in India, but if every Indian city with a population of 100,000 or more were to start a tuberculosis settlement a few miles outside municipal limits, with accommodation and arrangement for expert treatment of patients of all types, and with separate quarters for the families of those fit to resume work, the speaker believed that a need would be met and the public health improved. Money should be raised mainly by public subscription rather than by government assistance, and by many small subscriptions rather than a few large ones.

Dr. P. V. BENJAMIN said that a tuberculin survey by the Union Mission Sanatorium, South India, suggested that the infection, even in the villages, was widespread, the disease usually being of the acute rapidly developing type. In spite of the widespread infection and severity of type, there was a surprisingly small amount of tuberculous disease in the area of the tuberculin survey. The fact that the type of disease met with was almost exclusively acute exudative might be due partly to auto-inoculation, brought about by undue stress or unfavourable environment during a period of relative instability in tuberculosis immunity, and partly to exposure to repeated massive doses of tubercle bacilli from outside. As many as 40 per cent. of the patients gave a history of direct contact with tuberculous patients. Dr. Benjamin urged that further research work should be undertaken through surveys in different areas, but coördinated under a single control; also that efforts against tuberculosis should not be wasted in a general broadcast type of propaganda, but should be concentrated and directed to reach and educate those among whom the disease is actually found; and finally that efforts should be made to detect, treat, and isolate those who were a serious source of danger to others.

Mr. NORMAN MACLENNAN (Department of Health, Palestine) said that a tuberculosis survey had been carried out amongst all sections of the Palestine population in 1934–35; observations were also made on tuberculin sensitivity rates in school-children 5–13 years of age. It was found that the Palestine rates were considerably less than half the figures given for London and for Leeds, and it was likely that the process of tuberculisation would increase in the near future. The immigrant adult Jewish population was, however, probably already tuberculised. Factors generally admitted to be operative in promoting the incidence and spread of tuberculosis existed in a large proportion of the population. These factors were, uncontrolled infection, poverty, malnutrition, overcrowding, ignorance, and insanitation. As far as the nomadic Bedouin in Transjordan were concerned, both individual and racial resistance appeared low, and the disease was often of the "galloping" variety. Bovine infection apparently played a negligible rôle in the production of the disease in Palestine.

Prof. S. LYLE CUMMINS presided over the last session of the conference.

Dr. BERNARD MYERS, speaking on tuberculosis in New Zealand, said that Maoris contracted tuberculosis more easily than the New Zealanders of European descent and appeared also to have a lessened resistance to the disease, so that the death-rate was distinctly higher. The hygienic conditions under which the Maoris lived and their reluctance to adopt the necessary European methods made their treatment very difficult. An advance had, however, been made by the establishment of tuberculosis clinics in various parts of the North Island and a tuberculosis scheme was being organised which was expected to bear fruit in the near future. Dr. H. B. Turbott, medical officer of health at Hamilton, New Zealand, carried out in 1933 a thorough survey of a typical Maori country population, and the knowledge gained resulted in the adoption of a care and after-care scheme over the same area, covering about 4000 Maori population. The tuberculosis mortality in the demonstration area dropped to less than half between the years 1934 and 1936. And thus after three years' trial the scheme had proved sufficiently successful to recommend for adoption for Maori's throughout New Zealand.

Dr. J. CAUCHI (Nigeria) dealt with tuberculosis in West Africa. Explaining that Nigeria had an approximate population of 20 million over an area of just under 373,000 square miles, and that outside the municipal area of Lagos there were almost no qualified men in private practice—the actual available strength of the establishment in the country at any one time amounting to less than 100 medical officers—he said it was obvious that only a small minority of those suffering from disease could ever come to the notice of the medical organisation. It was therefore unavoidable that their knowledge of the incidence of tuberculosis in Nigeria should be limited, although the incidence was known to be high. In 1935, in the returns of Government institutions, tuberculous infections accounted for over 23 per cent. of the total of 836 fatal cases of infectious

disease. The two main clinical groups of cases seen in Lagos were: (1) those showing cavitation and surrounding fibrosis of the lungs, and (2) those showing multiple lesions of the various organs and tissues. In both groups the disease followed a steadily progressive course with little or no evidence of reparation or retrogression. It was thought possible that these two groups might be correlated to two different strains of *Bacillus tuberculosis*. If this theory was confirmed, it should have a bearing on practical methods of control. Tuberculosis had been made notifiable since last year for the whole of Nigeria, and cases were being reported from many of the hospitals. Lagos had been undergoing rapid urbanisation in recent years, and as house building had lagged behind the increase of population overcrowding had resulted, with its increased opportunities for infection. Town-planning and housing improvements which were now being energetically carried out constituted sound lines of control. There was also some evidence of tuberculosis among cattle in widely scattered districts. There was thus ample material for tuberculosis research by clinician, laboratory worker, and public health officer as soon as the country could afford to add to its present much too limited staff.

The conference concluded with speeches from Dr. A. D. PRINGLE, representing the Transvaal Chamber of Mines, and Dr. G. M. C. POWELL, representing the medical services of Northern Rhodesia.

AN AMBULANCE IN SPAIN

LAST November we published a letter from Mr. K. Sinclair-Loutit describing the work of the Spanish Medical Aid Committee's ambulance unit at Grañen in Aragon. In December most of the personnel left for an area of greater activity and the following letter gives a further account of what they are doing.

"Here on the Madrid front we lead a very different sort of life. In the three months we have been here, we have established five different hospitals and treated, in round figures, 2000 wounded. Our function is that of mobile hospital to the XIV Brigade which means that we lead a very active life, often being compelled to pack up, transport, and re-establish the entire hospital in 24 hours. In the beginning we found this a well-nigh impossible task, but now, with proper division of labour and systematised packing, we are beginning to look upon it as being all in the day's work. We are usually housed in large villas of fascist ownership which, with a little initiative, can be converted into excellent first-line hospitals. This is not always so, however, and in one case the choice lay between a baroque palace, the walls of which were festooned with cupids and saints chasing each other round with a fine disregard for the laws of hagiography, and a sixteenth century Alcaldia. We chose the latter because the rooms were larger and there were accessible water and some elementary sanitation It was built round a most beautiful courtyard and among its amenities was a bar which between 4 A.M. and 7 A.M. was converted into an operating theatre—much to the surprise of some local inhabitants who dropped in for 'a quick one' at 9 o'clock. The public hall became our largest ward, every other part of the building being utilised, so that when we came to leave six weeks later, the place was wired for electric light, there was running water on the premises and the lavatories were up to normal English standards.

"We carry with us a carpenter, an electrician, and a plumber, who in Spain are as essential as any of our personnel. They also confer a lasting benefit on any premises we occupy; thus when the line advances, the civilians reoccupying those houses find their last state better than their first.

"We usually arrive at the village that has been chosen for us—some 14 or 15 kilometres behind the firing-line—in the small hours of the morning. Large convoys by day are too vulnerable to aerial attack. Our house, which has already been marked and is often enough Hobson's choice, has to be immediately prepared for the results of the dawn offensive, which will begin to arrive about 9 A.M. Three things are our first attention: (*a*) a working operating theatre; (*b*) a minimum number of beds; (*c*) a proper water-supply. This is sufficient for the first rush and the rest can be completed in the subsequent 24 hours.

"We attempt to follow the same plan in all our hospitals. We start with a large reception room which can hold about 15 stretchers and the same number of ambulant cases. Here, as the cases arrive, a rapid sorting is performed by the reception officer and the wounded are dispatched to major or minor operating theatres, or, in cases of great shock, straight to the wards. He, too, is responsible for evacuations, dispatching those who can stand further transport farther back from the line. Here, also, any first-aid treatment is given, the pre-anæsthetic dopes, antitetanic, and anti-gas gangrenous sera, morphine, and, with the lighter cases, a very welcome cup of coffee and a cigarette. Next comes the operating theatre, or theatres. We have always found this a great problem: it is difficult to find a series of suitable and adjacent rooms to give our operating teams separate theatres. In the last two hospitals we have had to put all five tables in the one large room—this has proved an admirable arrangement and an economy in both material and staff.

"The theatre and reception room having been chosen, the rest of the house goes of necessity to wards, office, and kitchen. Our small sterilising-room is in a way the most vital part of the hospital. We cannot rely on prepared dressings nor can we allow anyone else to do our sterilising; and so, for instance, every bit of gauze is cut and autoclaved on the premises. Our steriliser, an ex-R.A.M.C. orderly, is kept hard at it keeping up the ever-diminishng stocks.

"The whole organisation is designed on such a scale as to deal with about 120 cases daily, with 5 operating tables and 70–80 beds.

"Having settled the all-important question of the hospital, the billeting officer has to house and feed some 50 personnel. Amongst our number are representatives of every European country—English predominating on the medical staff. This does not, as one might expect, result in a babel, for the war has produced its own language, a sort of trench-Spanish. A little difficult for lengthy conversation with a Spaniard, but quite enough for a Czech and an Englishman to make each other understand.

"As we are so close to the line we cannot rely on uninterrupted or fixed hours of work. We have often had to work the 24 hours round and that under the difficulties entailed by air-raids, failure of the light supply (here the grid system often works right up to the front line) and all the other accidents of war. A Belgian driver has now rigged up a very effective emergency lighting plant for the theatre out of salvage from car wrecks and a dynamo from a bombed garage; so now we can carry on with something better than flash-lamps and candles.

For the sanitary service there is no rest. When our brigade is "en repos," we, although things are

naturally quieter, have a full day's routine work with medical (as opposed to surgical) patients, occasional civilian road casualties, routine inspections, and inoculations. Then there is the checking-up of stores from which arise those urgent appeals you receive (and we hope attend to at once) sent out by our London committee. Then the theatre staff are fully occupied in preparing dressings, manufacturing plaster bandages, repairing gloves, and cleaning and adjusting instruments. During these brief rest periods each arm of the brigade tries to organise an evening's entertainment for the remainder of the service. First, a musical entertainment followed by a dance—always described as a *Gran Bal*! As the women are naturally in the minority there being only eight English nurses and a few Spanish girls from the village, there are no wall-flowers and one sees such couples as a 6-foot Belgian regimental sergeant-major waltzing around with a 5 ft. 4 in. Polish dispatch rider. The order to move comes and back we go to some hard-pressed sector.

"The contrast between this and our former work on the Aragon front strikes one from every angle. At Grañen we were permanently established behind a stationary defence line: Spain was on the defensive. That line, at any rate when we arrived there last August, was manned by discoördinated militia without unique command, without concerted plan of action. All that has passed. And now, eight months later, we find ourselves behind a determined and disciplined army engaged in an offensive which stretches from the borders to the seas against a foreign fascist invasion. Thus *No Pasaran* has changed to *Nosotros Pasaramos*."

MEDICINE AND THE LAW

A Disputed Will

IN 1908 a Lancashire gentleman took to his bed complaining of influenza and malaise. He had a slight rise of temperature, but did not appear to be seriously ill. In a few days, however, his illness took a serious turn and his doctor was summoned. The patient obviously had an acute abdominal emergency, and diagnosis of a perforated typhoid ulcer was confirmed by a second opinion. He was given occasional doses of morphia—gr. ¼ hypodermically—to ease his pain. In a day or two he died, but a few hours before his death he was propped up in bed and signed a long will which had been prepared by his solicitor and by which he left his wife an annuity and the bulk of his fortune to his sons and their descendants. His daughter, then only a few months old, received only a small share of the testator's inheritance from his father. For various reasons she did not learn of the circumstances in which the will was executed until 1936. She then issued a writ against the executors alleging that the will was not properly executed because the testator, when he signed it, had not possessed sound mind, memory, and understanding; that he did not know and approve of its contents, and was delirious and comatose the day before and continued in this state with intervals of consciousness until he died; that he suffered a great deal of pain and distress and died two hours after the execution of the will; that he gave no instructions for the will, that it was not read over to him, and that he could not appreciate or understand its meaning, effects, or contents, or form a rational opinion of his financial position or the claims of his family on his testamentary dispositions.

The action was heard before Mr. Justice Langton on April 22nd, 23rd, and 27th. By good fortune Dr. Walter Rigby, the testator's medical attendant and a witness of the will, was able to give evidence of the circumstances. He said that the dying man's mental state was quite clear. There had been nothing to show that he knew it was his will, but there was no doubt that he did know. Cross-examined, he said that perforated typhoid ulcer was very rare but almost certain to cause death in two or three days; that delirium was not a common feature of the illness unless the temperature was high. Typhoid being a "low fever," this was not usual. The patient, although not quite normal, was perfectly in possession of his senses and knew quite well what he was doing. He could see and was conscious of his surroundings. He had no persistent agony or pain, nor had he been delirious or comatose within the doctor's knowledge. Other evidence showed that the will had been drafted on the instructions of the testator. It has been settled law since the case of Parker *v.* Felgate 1883, 8 P.D., 171, that if a person has given instructions to a solicitor to make a will and the solicitor prepares it in accordance with those instructions, the testator need only be able to reflect: "I have settled that business with my solicitor: I rely upon him as having embodied it in proper words, and I accept that paper which is put before me as embodying it." As the case was settled, the court had no opportunity of hearing evidence by Sir William Willcox and Dr. G. W. B. James on the probable effect of a perforated typhoid ulcer on the mind of a testator. The case is interesting, not only because the cause of the alleged testamentary incapacity was unusual but also because, although the events happened nearly thirty years ago, the evidence of the medical attendant was available. Its absence would probably have handicapped the executors considerably, for the onus was upon them to prove that the will had been properly executed.

REFORM OF THE CURRICULUM

(FROM OUR EDINBURGH CORRESPONDENT)

A DISCUSSION on medical education was held last week in Edinburgh under the ægis of the University Union.

Sir FRANCIS FREMANTLE, speaking as a medical Member of Parliament, said that in establishing the General Medical Council Parliament had delegated to the profession itself the duty of maintaining standards of education and etiquette. The standards thus attained were high, but the dual factors of government protection and stereotyped training had resulted in a rigidity of mind in the profession, and an undue bias against innovations, as was exemplified in its tardiness to acknowledge the principles of homœopathy and osteopathy. Among changes he would recommend in the medical curriculum was more thorough instruction in the history of medicine, to offer encouragement and to foster the student's pride in his profession. Teaching should be directed rather to the maintenance of perfect health than to the cure of disease, and a place should be found for instruction in administration and communal medicine. He accused physicians of faulty pathology; the identification of an organism should not end the investigation of a case; the patient should be followed to his home or place of work, and the prime cause, which had enabled that organism to flourish should be sought and eradicated. Students should be judged in examinations not only by the marks then obtained, but also by their previous record of work, intelligence, and tact.

Dealing with the supervision of medical schools

by the General Medical Council, Sir Francis maintained that the Council's powers were too restricted; further that the Council, as now constituted, with members who had received their training upwards of thirty years ago, was not a suitable body to make the necessary improvements. There was but little prospect of aid from the Government in reforming the medical curriculum, and such reform must be initiated by the individual medical schools, and especially by the universities. He favoured the appointment of younger men to the General Medical Council; the addition of student representatives to boards of studies; lay representation of the health services on the General Medical Council; and the formation of a statutory Health Council under the Privy Council, which would assist the General Medical Council in the necessary reforms, and be responsible to Parliament for the coördination of health services.

Dr. G. O. BARBER (Cambridge and St. Mary's Hospital, London) spoke as a general practitioner. The student, he said, tended to regard the acquisition of a medical degree as fully and finally qualifying him to undertake the care of patients. This view was encouraged by the general public, which placed unfaltering faith in those who hold such a degree. In point of fact the possession of this degree indicated only that a high standard had been reached in a large number of disconnected, academic, scientific subjects. Dr. Barber pleaded for a larger representation of general practitioners on the General Medical Council, and amongst the teachers and examiners of students. Speaking of the teaching of future general practitioners by specialists under the present system, he declared: "we are like bricklayers, who have been taught to mix their mortar by architects who have never touched a brick." He wished to see more thorough grounding in the common ailments, strict limitation of academic instruction, and a break-down of the watertight compartments in which subjects were now taught. The medical course should involve less memorising; there should be more direction of the student's thinking powers, and less exhibition of the teacher's prowess. Academic instruction should be reduced to that minimum, which included only material directly applicable to practice, and such instruction should be undertaken in connexion with practical work. Anatomy and physiology should be more closely correlated, as should also pathology and bacteriology; and the connexion of these subjects with clinical medicine should be more adequately demonstrated. The anatomy course should be much curtailed. Dr. Barber pressed the claim for instruction in the common ailments and social and preventive medicine, whilst agreeing that this would necessitate the surrender of some part of the present curriculum. He thought that the special subjects, of which only a general knowledge was needed, might be pruned.

Prof. SYDNEY SMITH defended the curriculum at Edinburgh as being years in advance of that at any English school. The claims of preventive medicine were amply realised, at least in Edinburgh, and this was exemplified by the chair in child life and health, by the institution of school medical services, and by systematic antenatal supervision. Prof. Smith contended that the premedical subjects—physics, biology, and chemistry—should be learnt at school. It was intended at Edinburgh University to institute a full five years' course, not including these subjects, which could then be learnt either at school or at the University in a course unconnected with medicine. Other changes shortly to be effected at Edinburgh were the curtailment of practical anatomy and lengthening of the course in physiology; a more generalised instruction in biology; and a fuller course in applied physiology and anatomy, to be continued throughout the five years. The systematic teaching of medicine and surgery was to be largely transferred from the third to a later year, and instruction in these subjects was to be given in hospital, to ensure that the theoretical and clinical aspects should be not divorced. Further clinical instruction was to be given at the expense of vacations. Under the system now employed in Edinburgh, pathology and bacteriology were closely correlated with theoretical instruction in medicine and surgery, and with clinical work. Prof. Smith strongly rebutted the suggestion that the teaching of special subjects should be curtailed. This instruction was, he asserted, essential and was general enough to be of interest to the general practitioner. He approved of the teaching of students by specialists, who, he asserted, were not unmindful of the needs of the general practitioner. The practitioner required the first-class training, which the specialist could offer. While allowing that much could be said in support of the old system of apprenticing students to practitioners he thought the present system fitted the student more fully for his manifold rôles, as scientist, artist, and priest. It was true that a student could not be a competent physician after five years' training, but the degree he obtained implied a solid basis on which he could build for the rest of his life.

After further discussion Dr. CHALMERS WATSON, in summing up, supported Sir Francis Fremantle's plea for a reorganisation of the curriculum, and emphasised the necessity of instruction in preventive medicine.

THE ROYAL SOCIETY

THE only medical man among the 15 Fellows elected to the Royal Society on May 6th was Dr. A. N. Drury, lecturer in pathology in the University of Cambridge. He is distinguished for researches on the refractory period of, and conduction in, heart muscle, for studies of coronary circulation, and of the physiological action of adenosine. He has recently published jointly observations relating to the action of psychosin sulphate on bacteria, toxins, serum, and red blood cells. Mr. Percival Hartley, D.Sc., does valuable work in close relation to medicine as director of biological standards at the National Institute for Medical Research, and as member of the British Pharmacopœia Commission.

We offer cordial congratulations also to Mr. J. D. Bernal, lecturer in crystallography, University of Cambridge; Mr. A. C. Chibnall, assistant professor of biochemistry, Imperial College of Science and Technology; Mr. G. R. Clemo, professor of chemistry, Armstrong College, University of Durham, Mr. H. M. Fox, professor of zoology, University of Birmingham; Mr. W. E. Garner, professor of physical chemistry, University of Bristol; Mr. Sydney Goldstein, Ph.D. lecturer in mathematics, University of Cambridge; Mr. H. L. Hawkins, professor of geology, University of Reading; the Rev. J. E. Holloway, lecturer in botany, University of Otago; Mr. William Hume-Rothery, D.Sc., Warren Research Fellow of the Royal Society; Mr. T. G. Mason, Sc.D., of the Cotton Research Station, Trinidad; Mr. J. R. Moir, archæologist; Mr. M. L. E. Oliphant, Ph.D., assistant director of research, Cavendish Laboratory, Cambridge; Mr. C. F. A. Pantin, Sc.D., lecturer in zoology, University of Cambridge; Mr. D. R. Pye, Sc.D., deputy director of scientific research, Air Ministry; and Mr. E. C. Stoner, Ph.D., reader in physics, University of Leeds.

GRAINS AND SCRUPLES

Under this heading appear week by week the unfettered thoughts of doctors in various occupations. Each contributor is responsible for the section for a month; his name can be seen later in the half-yearly index.

FROM A MEDICAL ECONOMIST

III

WHEN children are ill their toys, the toys they cannot play with, acquire a new significance. If the illness is very serious parents will scarcely endure the sight of these toys.

If the subject is discussed at all it is usually spoken of in terms of memory, the idea being that the toys recall happier days. A dramatist however, who is accustomed to secure his effects by means of material things as well as by means of words and gestures and expressions, challenged this view recently in my hearing. "It is not," he said, "that the toys recall happier days in the past but that they demand happier days in the future."

Asked to explain himself, he mentioned the wedding dress of which so much use is made by Sir James Barrie in his play, *Quality Street*. "A glimpse of that dress towards the end of the play makes many people weep," he declared. "Indeed the dress undergoes transmutation, from act to act. At first it is just a wedding dress; at last it has become an actor endowed with a personality of its own and playing the chief part. The effect is tension—the hope that the wedding dress may yet be worn. Kill that hope and the dress loses its significance and becomes a relic."

I suppose that it can be said that, in the same way, the toys are unbearable because of the hope of recovery. If recovery does not take place the toys will become relics to which no tension will attach. Indeed, in that sorrowful case, they may, as precious memories, afford some consolation.

* * *

The point that seems to emerge is the tendency of all men and women to transform the materials which surround them into spiritual values. My hat in the hatter's shop and my hat upon my head are two widely different things. In the latter case, side by side with consumption, there is going on a process of change whereby what was as obvious and definite as a brick is becoming endowed with new, mysterious qualities. Aristotle understood this process and detected in all things two kinds of substance—the accidental and the essential. The accidental substance of my hat happens to be black felt—it might have been straw or beaver or cloth; its essential substance is its "hattishness."

Aristotle devoted long and careful thought to the nature of essential substance, and it is profitable still to ask oneself: "What is a hat?" "What is a chair?" and so on. The question soon convinces those who ask it that no definition in terms of material substances, that is of accidental substances, is possible. Nor will mere description afford a satisfactory answer. Whether we like it or not we shall find ourselves compelled to bring in the human element. Thus, a hat is a covering for a head; a chair is something upon which to sit. Our definition is therefore teleological. Further, it expresses a relationship between the designer and maker of the hat and the user—a relationship which, if the hat is a good one, is likely to be of a neighbourly character in the broadest sense of that term.

The hat, in short, embodies an idea of a specific kind—namely, usefulness. It is upon this idea that its owner's mind becomes fixed and it is this idea which, if the owner lies ill, will occasion tension in the hearts of those who care for him. No piece of material unmade into an article of use is capable of producing such tension.

* * *

Aristotle called his study metaphysics. Another name was given to the same study by St. Thomas Aquinas, who recognised in the products of craftsmanship an expression of the emotional relationship which exists between all men of good will. Essential substance for him was love and he saw the material universe, therefore, as a spiritual universe. *Verbum caro factum est.* Thus he recognised the capacity of material things to become vessels or containers of spiritual things, nor was he disposed to establish any sharp differentiation between the vessel and its contents. The wood of which the chair was made was, in fact, the chair. It had been subjected to a process of trans-substantiation whereby, retaining the physical properties of wood it had, nevertheless, acquired the metaphysical or, as he would have preferred to say, neighbourly qualities of a chair. It had acquired also the power to create tension in the form of a claim to be used.

St. Thomas supposed that this claim to be used was characteristic also of living forms and his ideas have an important bearing to-day upon the attitude of men who cannot find employment. These men, as we are all well aware, produce a tension in the minds of their neighbours which, recently, was one of the most important elements in the political and economic life of the country.

Incidentally the identity of a man with his use to his fellows, the transmutation of man into craftsman, artist, doctor, is, from the individual's point of view, a very remarkable psychological process involving not only a discipline, or if the word be preferred, a morality, but also an enthusiasm strong enough to carry the apprentice or student through the severe restraints of training. Such enthusiasm may not be self-conscious in the sense that a definite service is held in view from the beginning, but since it seeks and finds some particular expression—making chairs or painting pictures or engaging in medical research—it is not the less on that account a surrender of purely selfish aims and so a kind of rebirth. Not only has the craftsman acquired power to transmute materials into spiritual values; he has himself, also, in the process been transmuted so that the greater his capacity to create the greater also is likely to be his contempt of personal considerations or personal safety. His body, an accidental substance, has thus become identified with the essential substance of love.

* * *

The fact of this trans-substantiation is always present consciously or unconsciously to the doctor's mind, in which, invariably, it produces tension. The doctor feels that the body disabled by sickness challenges him to restore it to its usefulness and so to secure the future. In responding to that

challenge the virtue goes out of him and he experiences, often, a sense of exhaustion disproportionate, apparently, to the effort he has made. In fact, his effort is creative in the true sense of that word, for the injury he essays to repair is not to flesh and blood only but also to the power which has transmuted flesh and blood into spirit.

That power, in the case of materials, lies outside of the material itself and must be imported into it. This is so obvious that none for a moment doubt it. But where flesh and blood are concerned such importation, being less obvious, is often overlooked. The body is self-repairing and so we discount the truth that external influences can be, and always are being, exerted upon the reparative process. One of these influences, as has been said, is that virtue which the doctor feels he has lost; another is the patient's own enthusiasm, that is to say the patient's own spirit. He who turns his back to the wall will not recover. It is difficult, in the face of that fact, to avoid the conclusion that the rebirth which is the finding of a vocation is the importing into a man's body of a new director, spirit, or soul, henceforward to be the man. Browning had knowledge of that incarnation when he wrote:

> "Lo, a blade for a Knight's emprise
> "To fill the empty sheath of a man."

And during many centuries the thought of Europe was focused upon it. Thus, it was believed that help given to anyone in distress was help given to the spirit in possession of the distressed person's body. The story of St. Christopher is a case in point; so is the story of the crippled child who, on being rescued, was transmuted miraculously into the form of Christ. Doctors, on that showing, healed souls or rather helped souls to heal themselves. The conception of a secular medicine was almost wholly unknown.

* * *

It is of interest to note that, until frustration fell upon the world in the nineteenth century, poets and artists accepted the idea of immortality as self-evident. The poets of the frustration period are, without exception, minor poets. To be condemned to uselessness in unemployment or to perverted use in sweat-shops is, apparently, to lose that sense of the supernatural which is the heritage of all men whose enthusiasm to serve their fellows has free play. In a world of frustration and perversion, moreover, the minds even of the free become darkened. Thus there would seem to be an interaction between economic conditions and the intimate texture of thought. The chairs in a museum, so long as they remain out of reach, are wood and upholstery; the men held prisoners of enforced idleness or perpetually vexed by fear, are so much flesh and blood—in Mr. Roosevelt's terrible phrase "industrial cannon-fodder." Not for them the ecstasy of self-surrender to love of their fellows, the stern and inexorable morality inculcated by refractory materials, the growing sense of identity with powers which are not of this world, and so of emergence from the dimensions of space and time which flesh and blood, untransmuted, impose like a turnkey upon the human spirit.

PARLIAMENTARY INTELLIGENCE

THE FACTORIES BILL IN COMMITTEE

THE Factories Bill was further considered by a Standing Committee of the House of Commons on April 27th. Major LLOYD GEORGE was in the chair.

On Clause 68 (General conditions as to hours of employment of women and young persons),

Mr. SILKIN moved an amendment to provide that as respected young persons where the hours of employment included the hours from half-past eleven in the morning to half-past two in the afternoon an interval of not less than three-quarters of an hour should be allowed between those hours for dinner if dinner was taken in the factory or in a building of which the factory formed part, or one hour if dinner was not taken in the factory or such building. He said that hon. Members had recently been concerned with malnutrition; it was almost as important to secure that meals should be taken at the proper times as that they should be of the right quality and adequate in quantity. As the clause stood young persons might be employed for considerably longer than three hours without any guarantee of a proper meal time between half-past eleven and half-past two. The principle of the amendment was accepted as far back as 1912 and was contained in the Shops Act of that year.

Mr. G. LLOYD, Under-Secretary, Home Office, said that in 1912 there was no limit to the hours for women and the limit of weekly hours for young persons was 74. It was therefore imperative to see that there was sufficient time for lunch in the middle of the day. The position was very different under this Bill. It was a question of striking a compromise in individual cases all over the country.

Mr. BANFIELD said that he knew that even to-day in thousands of workshops young persons got no proper meal time.—Mr. LEWIS JONES said that every employer was anxious that proper facilities should be given for meals, but this amendment might interfere with the collective agreements which had been made by trade unions and employers, in some cases providing for a minimum of one hour for the midday meal.—Mr. SHORT said that if when drawing up welfare orders the Home Secretary would undertake to consider this aspect, particularly in respect of young persons, and make some conditions regarding the hours of meals that would meet the Opposition.

Sir JOHN SIMON, Home Secretary, said that he did not think that their existing powers as regarded welfare orders covered an actual mandatory direction as to the length of the interval for meals. The conditions in different kinds of work varied very considerably and it was better not to make a stiff rule which had to be applied indiscriminately. The effect of a discussion like this however, which would be noticed outside, was all to the good, because no one desired to rush people unduly, or to give them indigestion.

The amendment was negatived.

On the question that the clause as amended stand part of the Bill,

Mr. RHYS DAVIES said that the Labour Party would vote against the clause to show their dissatisfaction with it. He was a little alarmed that members of all parties failed to understand that this country was lagging behind some other industrial countries in the treatment of young people. He was ashamed at the way boys and girls were exploited in hotels.—Mr. GRAHAM WHITE said he hoped the limit of working hours for young people would be nearer 40 per week than 46.—Sir W. SMILES said it was unnecessary for young people under 15 to work in factories or to work 48 hours a week, but some workers in his constituency seemed to want their children to go to work at 14 and to work for 48 hours a week.—Mr. VIANT said that many of the parents referred to by Sir W. Smiles had small incomes and that was why they were anxious for their children to go to work at an early age. When they realised that it would be for the ultimate benefit of their children that they should not start work so early

their attitude would change.—Mr. G. MANDER urged that the Committee should consider the limitation of working hours for young people up to 18 years.—Mr. G. BUCHANAN said that the clause was shockingly inadequate.

Sir J. SIMON said that he had undertaken to put down a new clause modifying the hours of labour in factories for young persons between 14 and 16. He was glad that the Committee was going to make the modification in the hours of work of young people. He was sure it was right.

The clause as amended was ordered to stand part of the Bill by 34 votes to 18.

On Clause 70, which provides that, with limitations, pressure of work in any factory may be dealt with by the employment on overtime of women and young persons who have attained the age of 16,

Mr. ELLIS SMITH moved an amendment to delete the reference to "young persons who have attained the age of 16."—Mr. M. MCCORQUODALE supported the amendment. He said there was a general feeling in the country that young people ought not to work overtime.—Mr. VIANT said that they should prohibit the working of overtime by young people under 18.—Sir J. TRAIN said that overtime was not economic, but it had to be worked in certain circumstances.—Viscountess ASTOR said that an overwhelming case had been made out for the amendment. Every organisation concerned with juveniles was alarmed at the effect that overtime had on them. The question had been asked whether industry could afford not to employ young people overtime, but the real question was whether the country could afford to overwork its juveniles.—Sir W. SMILES said that if overtime for persons up to 16 was prohibited there should at least be some exceptions, such as apprentices in the engineering trade.—Mr. WAKEFIELD said that young persons between the ages of 16 and 18 should not be allowed to work for more than 48 hours a week.

After further debate,

Sir J. SIMON said a Factory Bill worthy of the name must, within limits, make improvements which would involve a certain measure of reorganisation. At the same time they must realise the difficulties. There would be very many cases which would never come up to the maximum, and which he hoped increasingly public opinion would urge should be brought below the maximum. They wanted to know to what extent the provisions of the Bill would be an advance on present conditions. He had a list of some 31 trades. In the woollen and worsted trade, in 45 per cent. of the factories over 100 hours of overtime per year were being worked by women and young persons. In 29 per cent. of the cases over 150 hours a year were worked; in 16 per cent. over 200 hours; and in 3 per cent. over 300 hours. These were very big figures. They were, of course, a great deal short of what the present law allowed.—Mr. GIBBINS: Were those hours worked in addition to the 48-hour week?—Sir J. SIMON answered in the affirmative. He gave figures showing the amount of overtime worked in various trades at present, though he did not suggest that the present position ought either to be authorised by Parliament or made a standard for the future. But under the existing law over and above the 48 hours a week it was possible in a non-textile factory to have in the year 640 hours of overtime for women and young persons and in textile factories the figures were somewhere between 300 and 400 hours. At the present time those hours might not be worked in many factories, but the figures in a large proportion of cases greatly exceeded that which this Bill would make permissible. The Bill would involve much reorganisation in many factories. In September, 1936, the Ministry of Labour appointed a Board of Inquiry which after investigation recommended that from Jan. 1st, 1937, the number of hours for all workers employed in the industry should be 48 per week. They recommended that paid overtime might be permitted in excess of 48 hours and they also recommended that in the case of women and young persons under 18 overtime should be restricted to six hours per week and that the total overtime worked by any individual woman or young person in any calendar year should not exceed 96 hours. Those recommendations were subsequently embodied in a collective agreement between the parties in the industry and that agreement was now in force. He would remind the Committee that the Government had approved the view that there should not be any overtime at all for juveniles between 14 and 16. He would give figures to illustrate that change. The present legal hours for young persons between the ages of 16 and 18 in a year were 3060 hours, cutting out one week for a statutory holiday. Under this Bill they were going to reduce that total to 2550 hours—10 hours a week less in a 51-week year. That seemed to him substantial. In addition they were laying down that overtime should be limited to 100 hours and that there was not to be more than 30 weeks in which it could occur; and if it occurred to the maximum extent permitted in one week it would not be spread over more than 16 weeks. What more could the Government properly and wisely do? He did not attach much importance to the argument that they might have a breakdown, or that two or three boys might be away through illness. It was the industries which depended on juvenile labour which mattered and there were something like 500,000 people between 16 and 18 engaged in factory work of some kind or another.

It seemed to him that there were two qualifications which should be made on the proposals of the Bill: (1) That even this limited amount of overtime ought not to be allowed in an industry which was injurious to the health of young people. (2) That if as a result of inquiry the view was taken that overtime could be reduced without serious detriment in the industry the Secretary of State might make regulations to that effect.

Mr. SHORT said that Sir J. Simon had given them nothing and had entirely ignored the collective opinion of the Committee.

The amendment was negatived by 34 votes to 19.

A further amendment to add a provision that no young person in a factory should work more than 50 hours overtime in any calendar year was also negatived by 33 votes to 21.

The Committee adjourned.

The discussion of Clause 70 was resumed by the Committee on April 29th.

Mr. G. MANDER moved an amendment to limit the overtime to 20 weeks in any calendar year.

Sir J. SIMON said he would be prepared to agree to the figure of 30 being reduced to 25 if that was thought to be an advantage. They wanted something in the Bill to show that overtime was not intended to be the rule.

The amendment was agreed to with the figure fixed at 25.

Sir J. SIMON moved a new subsection to provide that if representations were made to the Secretary of State concerning any class of factories that, having regard to the particular circumstances, the overtime allowed under the clause could be reduced without serious detriment to the industry, he might direct an inquiry to be held and make regulations for modifications to secure a reduction of overtime worked by women and young persons in such factories.

The new subsection was agreed to.

Sir J. SIMON moved a further new subsection providing that if he was satisfied that the business in any class of factory involved the overtime employment of different persons on different occasions to such an extent that the provisions limiting overtime would, as respects a substantial number of factories of that class, be unreasonable or inappropriate he might make modifying regulations. Such regulations would secure that no woman should be employed overtime in a factory for more than 75 hours, and no young person for more than 50 hours, in any calendar year, and that no woman or young person

should, except as otherwise provided in the regulations, be employed overtime in the factory for more than six hours in any week or more than 25 weeks in any calendar year.

The new subsection was agreed to and Clause 70 as amended was ordered to stand part of the Bill.

The Committee adjourned.

The Factories Bill was further considered by a Standing Committee of the House of Commons on May 4th with Major LLOYD GEORGE in the chair.

On Clause 78 (Exceptions as to male young persons employed in shifts),

Sir JOHN SIMON moved a series of amendments which he said were designed to meet the wishes of certain members of the committee. This clause was directed to industries which required to be carried on continuously day and night. The present law did allow exceptional provisions to be made for night work in processes which required continuous attention, even in the case of young people under 16. He had come to the conclusion, especially in view of what the committee had done earlier in the Bill, that it would not be right to make any exception at all as regarded young persons under 16. They might have to do it in the case of youths between 16 and 18, but it was not necessary to do it for anybody younger and he proposed to make that clear in an amendment. Provision would also be made for an interval of not less than fourteen hours between shifts. Young persons over 16 would be periodically examined by the examining surgeon in the conditions of the work in order to see if they were fit for employment at night.

Several amendments carrying out the proposals indicated by the Home Secretary were agreed to.

Mr. A. SHORT moved an amendment to delete the part of the clause which allows young persons to work on the four-shift system between 6 A.M. and 10 P.M. on Sundays.—Sir J. SIMON said this was a system employed in certain trades and undoubtedly it appealed very much to the workers employed under it. He thought that they ought to give fair latitude to a system which had considerable practical advantages. The amendment was negatived.

On the question that the clause stand part of the Bill,

Mr. DENMAN said that night work for young persons was so well-accepted in industry that there was no chance of abolishing it at this stage, but he thought that it was desirable that it should not go out that that committee really approved of night work for young people as a permanent system. Medical evidence was lacking to show that it was injurious to the young persons themselves, but the point was that it was injurious to them as adults. He had had statements to that effect not only from a doctor of a London hospital who had experience of the effects of night work, but a factory inspector told him (Mr. Denman) that although they could bring no kind of evidence of ill health among young persons they could see the result in adults by whom they were surrounded every working day. An authoritative statement of the case appeared in THE LANCET (Feb. 20th, 1937, p. 451) after the second reading of this Bill. It was a very interesting editorial article which he wished hon. Members had read. It pointed out the simple fact that the evil appeared later in life and it made this a very interesting point in arguing that it was biologically unsound to subject young persons between 16 and 18 to the strain of night work. He felt sure that as we rose in civilisation, and as we paid more attention to the importance of youth in building the nation, we should raise this age from 16.—Mr. VIANT said it might not be possible to produce medical evidence, but from his own experience he knew that night work was not good for the health of anyone. He deplored the fact that the committee had not seen the wisdom of inserting in this clause a proviso prohibiting night work for young persons up to the age of 18 at least. This was the one black spot on the clause.—Sir E. GRAHAM-LITTLE said that no doubt he was asking for a counsel of perfection, but that did not deter him from making his protest against working young persons on night work. He would give some recent figures from an authoritative book just published by Dr. Vernon, an experienced research worker, whose conclusions had been accepted by the whole medical profession. Dr. Vernon showed that there was an extraordinarily high mortality-rate in the age-group of males between 15 and 19. He dealt with large figures because the unit was 40,000. In this age-group the number of fatal accidents was very high; they constituted one-fifth of the deaths in that group. The Departmental Committee on the Employment of Young Persons in their report recommended a general prohibition of night employment for a period of eleven hours, including the hours of 10 P.M. to 6 A.M., for young persons. The incidence of accidents during night work was also discussed in Dr. Vernon's book in a most judicial way. He said that on the whole accidents were more frequent during night work than during day work. In the iron and steel industry the rate was sometimes 50 per cent. higher. If they had a combination of what they might call an accident-prone group, boys between 15 and 19 years of age, and an increased rate of accidents in steel works, were the committee really comfortable in going forward with the suggestion that these boys should work at night in steel works? He thought there was a strong case for reconsidering this matter.—Viscountess ASTOR said that Sir E. Graham-Little had made out a very good case against night work for young people. If the Home Secretary would raise the age to 17 he would go a little way to meet the case. She could not possibly vote for working children of 16 on night work. The clause was ordered to stand part of the Bill by 24 votes to 13.

On Clause 89, which provides that the period of employment of male young persons who have attained the age of 16 may begin at 5 o'clock in the morning in that part of a bakehouse in which bread making is carried on,

Mr. J. W. BANFIELD moved the deletion of the clause. He said that there was no need for it in the trade.

Mr. G. LLOYD, Under-Secretary, Home Office, said that the 5 A.M. start for boys in bakehouses had almost disappeared in England, but it was not uncommon in Scotland, where apprenticeship started at 16 years. The Committee should pass the clause on the understanding that it might be modified when the report on the Committee on Night Baking was available.

The clause was ordered to stand part of the Bill.

On Clause 92 (Certificate of fitness for employment of young persons),

Sir E. GRAHAM-LITTLE moved the first of a series of amendments designed to enlarge the scope of the clause by enlarging the class of young persons who would be the subject of medical examination before being engaged in factory work. He said that the amendments were all attested by medical authorities.—Mr. GRAHAM WHITE hoped the Home Secretary would see his way to meet the point put forward in these amendments. There seemed to be no reason at all, and in fact every reason to the contrary, why the present provision in the Bill which limited the examination to young people under 16 should not be extended. He was advised that it was particularly valuable and necessary in the case of female young persons between 16 and 18. In any case, a single examination within a few days of the entry into employment was a very inadequate safeguard. Those who put forward these amendments urged that the scope of the clause should be enlarged by making the examination apply to all those up to the age of 18, and also that the examination should be repeated as a safeguard from time to time.

Sir J. SIMON said he did not deny that there were fair arguments for raising the age and the Factory Department and medical officers of the Home Office were not in the least disposed to pour cold water

on that idea if on balance it was a good one. The clause required that every young person entering a factory under the age of 16 should be examined by the examining surgeon. If there was any doubt as to fitness for employment the examining surgeon would re-examine. The advice given to him by the responsible medical authorities who were connected with the factory system was that these examinations were sufficient to secure that any young person under 16 who was suffering from defects would be warned off that employment and have to find his living elsewhere. It was intended also to make the examination a much more satisfactory one than previously. There was also to be a liaison between the examining surgeon and the school medical officer. There was a second point on which his medical advisers felt very strongly indeed. They were satisfied that there might be a considerable amount of feeling on the part of the older juveniles if it was said that because they chose to come into factory life they would by law be put under compulsory medical examination at intervals. They were making improvements in the medical inspection and it would be a mistake to go further.

After further debate the amendments were withdrawn and the clause was ordered to stand part of the Bill.

The Committee adjourned.

PANEL DOCTORS' FEES

In the House of Commons on Thursday, May 6th,

Mr. RHYS DAVIES asked the Minister of Health whether he was now able to state the terms of reference and the personnel of the tribunal to inquire into the fees paid to panel doctors under the national health insurance scheme.

Sir KINGSLEY WOOD replied that the object of the Court of Inquiry appointed by the Secretary of State for Scotland and himself was to investigate the question whether any, and, if so, what alteration ought to be made in the amount of the doctor's capitation fee having regard to any changes since 1924 in the cost of living, the working expenses of practice, the number and nature of the services rendered to insured patients, and other relevant factors. He was glad to say that the services of the following gentlemen as members of the court had been secured: the Right Hon. Lord Amulree, C.B.E., K.C., LL.D. (chairman); Mr. Thomas Howorth, A.C.A.; and Mr. D. H. Robertson, M.A. Mr. E. H. Phillips, O.B.E., of the Ministry of Health, to be Secretary.

The following are the terms of reference of the Court of Inquiry:—

To inquire and report to H.M. Government whether any, and if so what, alteration ought to be made as from Jan. 1st, 1938, in the amount of the capitation fee (per insured person per annum) on the basis of which the Central Practitioners' Fund under Article 19 of the National Health Insurance (Medical Benefit) Regulations 1936, and the corresponding Scottish Fund under Article 19 of the National Health Insurance (Medical Benefit) Consolidated Regulations (Scotland), 1929, is calculated, having regard to any changes which may have taken place since 1924 in the cost of living, the working expenses of practice, the number and nature of the services rendered by insurance practitioners to their insured patients, and other relevant factors. The inquiry is to proceed on the assumption that as from Jan. 1st, 1938, employed persons under the age of 16 will have become entitled to medical benefit by virtue of amending legislation, but that the conditions would not impose any obligation upon the practitioner to issue medical certificates to these persons. This capitation fee is not to include any payment in respect of the supply of drugs and appliances or any payment to meet the special conditions of practice in rural and semi-rural areas. Payments to insurance practitioners in respect of these matters are the subject of separate arrangements and are outside the scope of the inquiry.

Mr. RHYS DAVIES asked whether the right hon. gentleman contemplated that the report would be issued soon enough to admit of the Bill, which he had promised, being presented to Parliament and passed into law before the summer recess?—Sir KINGSLEY WOOD hoped that would be so.—Mr. THORNE asked whether the inquiry was not made necessary by the fact that the right hon. gentleman could not reach an understanding with the doctors.—Sir KINGSLEY WOOD thought it should rather be regarded as a friendly arrangement to have this matter dealt with by independent people. There were discussions between the British Medical Association and himself on this matter and this appeared to be the best means of dealing with it.

DIETARY SURVEYS AND NUTRITION POLICY

In the House of Lords on May 5th Viscount ASTOR drew attention to the report of the Advisory Committee on Nutrition to the Ministry of Health, and in view of the recommendations of that committee asked (*a*) whether the Ministry of Labour inquiry for the purpose of the cost of living index would include an inquiry into dietary surveys, and, if so, how many families would be concerned in this inquiry, and what steps were being taken to ascertain the family incomes so as to correlate this inquiry with that proposed to be undertaken by the Registrar-General and an independent statistician; (*b*) whether steps had been taken by the Registrar-General to carry out this proposed inquiry into the constitution of families by age, sex, occupation, and locality, and into the distribution of family incomes; (*c*) what local authority in urban and rural areas respectively were conducting dietary surveys in England and Wales and in Scotland respectively, and about how many families would be covered in each country. The noble Lord moved for papers.

Lord Astor said the main cause of the evils of malnutrition was undoubtedly poverty. By malnutrition he did not mean hunger or starvation, but a degree of ill health or of subnormality due to malnourishment, and in other cases actual bad physical development due to malnutrition in early youth. So that the problem really was one of purchasing power. Where they had a small income they had a small expenditure on the essential foods—the health-giving foods. It was a serious problem, because a large number of people who showed the effects of malnutrition could not be put right. It was a problem which arose very largely because of malnourishment in youth. A certain number of cases of maternal mortality were due to malformed pelvis. That was largely due to the malnutrition of the woman when she was a child. The difficulty was that they had to get into their minds an entirely new standard. He had no doubt that at the beginning of last century medical officers were perfectly satisfied with the housing conditions in our large industrial centres. To-day those same medical officers were unanimously agreed that those houses must be pulled down as slums. They had to bear that in mind when they saw quoted, as they so often did, reports from medical officers of health to the effect that there was no problem of malnutrition. Those who made such reports were out-of-date; they were not acquainted with the new knowledge—the new findings of science. After making all the allowances for exaggeration and over-statement, one could say without fear of contradiction that there was a real problem of malnutrition affecting millions of people of this country. In the Advisory Committee's report reference was made to methods of clinical assessment. Did the Ministry contemplate undertaking an investigation of the clinical aspects in direct correlation with the dietary surveys which it was proposed to make? The main function of agriculture, certainly in this country, should be to see that the right sorts of food were provided at the right costs for our people. We should aim at basing our agricultural policy upon the methods of the farmers who were making money rather than pay so much attention to the shouts and protests of the farmers who were not making money or who were losing money, or who

did not want to change their methods in order to move with the times. The Advisory Committee's report had indicated the importance of the nutrition of milk as an article of consumption and diet. It was the foundation of good nutrition. This country was surely a suitable and good country for milk production and yet after four years of the Milk Marketing Scheme they found a very low consumption of milk, retail prices the second highest in the world, and the dairy farmers were all discontented. There surely must be something fundamentally wrong with a scheme that had such results. The first thing wrong with the Milk Scheme was the structure of the governing body. If they were dealing with armaments nobody would suggest that they should go to the armament firms and say: "We will pass an Act of Parliament giving you statutory power to form a monopoly ring. You can elect your own governing body, and if any armament manufacturer dares to cut prices you can put him in prison, and we will have no Ministry of Munitions to supervise." That was being done under the Milk Scheme. The second thing which was wrong was that the Milk Board had used its powers in order to develop new industries in this country. These activities of the Milk Board had been condemned by the Milk Commission which had recently been sitting and also by the Milk Council; but the result of all this was that the price of milk in England to-day was much too high.

The Minister of Health, as soon as the Report of the Advisory Committee was published, circularised all local authorities drawing their attention to the recommendations of the report of the Committee and urging them to make more provision for supplying milk to mothers and children. Why should the Minister of Health ask the ratepayers to spend money in buying milk which had been artificially put up in price by another colleague in the Cabinet? The Minister of Health must get his colleagues in the Cabinet to give the country reasonably cheap milk—milk produced by an efficient dairy industry—and then he could justifiably ask the local authorities to accede to his request. Their aim should be to reduce the price of milk by 8*d.* a gallon, which would bring it down to 2*d.* a pint, instead of 3*d.*, which was the present cost. Even after they had done that, they would still have to have subsidised milk for large sections of the community. They could reduce the cost of milk by one-third. First of all they could save 3*d.* a gallon by stopping the subsidy and they ought to be able to save 3*d.* or 4*d.* on distribution. Ulster had a milk scheme which had been eminently satisfactory because the controlling influence on the Ulster Milk Board lay with the members nominated by the Government though the producers were represented too. Also the milk was compulsorily graded according to its hygienic quality, and farmers were paid according to the grade they produced. It worked automatically and, as a result, in Ulster the price of milk was very much lower than it was here. As to distribution he would advocate a bold policy. He found no reason why the nation should not have control over the wholesale distribution of milk. In Scandinavian countries they had what was called the Oslo breakfast: every child who arrived half an hour before school opened got a free breakfast of a glass of milk and bread and butter or margarine with fruit and also a cereal if possible. He (Lord Astor) did not necessarily advocate free meals to all children, or say all children should have to pay for them. He thought they must contemplate subsidising food, not only for children of school age but also for the pre-school child in nursery schools. He was glad to notice that in his circular to local authorities the Minister of Health urged local authorities to help mothers at maternity centres. If they were to subsidise the consumption of these protective foods so that mothers, pre-school children, and school-children had enough of them, in the next generation the country would have a very much stronger and healthier race and a much more prosperous agriculture.

Lord SNELL said that there was something incongruous in the fact that at a time when they were undertaking great national rejoicings they should have to confess that a large proportion of our population was actually underfed. The Government and people about the country seemed to be pursuing a false way of approaching the problem, in that they were putting the question of gymnastic exercises and of keeping fit before the question of feeding. It was good to see the grace of young life in gymnasium and elsewhere, but inflated muscles did not compensate for weakened hearts, and jerry-built manhood of that character was not what the nation required. The proposals made by Lord Astor should be very seriously considered by the Government. The right way to begin was first of all to feed the children and the mothers. There was no need to haggle as to whether milk should be 3*d.* or 6*d.* per pint, or what the profits should be. It was the business of the community to feed its children. What the children required was milk and if it could not be paid for, the Government should provide that milk free for children and also for expectant and nursing mothers.—Lord ELTISLEY said that the Milk Marketing Board and the various committees connected therewith had prevented a certain collapse of the milk industry in this country. It had undoubtedly saved from disaster 135,000 milk producers.—Lord NOEL BUXTON said that the experience of such bodies as the Save the Children Fund confirmed the plea that Lord Astor had made. He was glad that the Government in dealing with the problem had not been governed solely by the theory of parental responsibility, but had ensured a better start in life for countless children who otherwise would have suffered. All the evidence showed that that policy ought to be carried further.—Viscount BLEDISLOE said that as regarded young children we in this country might learn a great deal more than we had yet learned about their care, and particularly the supply and treatment of milk, from New Zealand, where the Plunket or Truby King system had been in use for a great many years and where the vital statistics showed the enormous advantage to the infantile population as the result of this system carried through not only for the benefit of nursing mothers but for the benefit of both mothers and children in what were known as the Karitane Homes which were to be found all over the Dominion.

The Bishop of NORWICH said that he thought they were apt to confuse the nutritive value of milk with the other side of the milk question. He could not feel certain that the restrictions now put upon the quality of milk were really as necessary as medical men told them they were, and the dairy farmers were in consequence striving to reach a standard that after all the medical man might one day pronounce to be unnecessary. He had never yet seen anything really convincing to show the relative nutritive value of plain milk, pasteurised milk, and boiled milk. Children did not like boiled milk. No one had told them in a really authoritative way what was meant by pasteurisation. It was found also that in many cases those who did drink raw milk without contracting disease seemed to flourish more on the plain raw milk than upon milk that had been treated in any way. He could not persuade himself that our system of bottling, and so on, was really satisfactory in delivering pure milk to the child. There were so many opportunities of lapses. He believed that a great impetus would be given to dairy farming if the standards demanded were readily intelligible and easily carried out, if they became intelligent pupils and not the slaves of laboratory experiments made on the side of medicine, and if they were able to take a broader common-sense view of the whole situation.

Lord DENMAN said that the Ministry of Health recently circularised maternity and child welfare authorities asking them to review arrangements for the supply of milk to mothers and to young children. The Minister suggested that "scales should be so framed as not to render it difficult for mothers to

take advantage of the authorities arrangements." A society which he (Lord Denman) represented complained that this instruction was too indefinite and that in some areas mothers and children under school age could not obtain free milk unless family income fell within a very low limit. In some cases the income, after deduction of rent for a family of five, must be as low as 25*s.* or even 22*s.* 6*d.*, before free milk was granted. He hoped that the Minister might be able to issue more definite instructions on that point, or that he might ask his Advisory Committee to draw up for the guidance of local authorities a scale based on the present knowledge of food requirements. The Minister's circular, valuable as it might be in some respects, went only a small way towards securing increased consumption of milk by mothers and young children.

Viscount GAGE, replying for the Government, said the investigations into nutritional problems fell into three simple categories—namely, what the people ought to eat, what they did eat, and methods of improvement. The report of the Advisory Committee showed that certain foods, especially milk, dairy products, green vegetables, and fruit were essential to health. They had protective value because they stopped certain definite deficiency diseases and also built up the resistance of the body to other forms of disease. It seemed difficult to exaggerate the importance attached by these experts, with a unanimity rare among experts, to the value of these protective foods, especially in infancy, and the Government entirely accepted the conclusions of the report on that subject. It was satisfactory to know that the average consumption per head of most foodstuffs had increased since just before the war and that with one exception there had been a general improvement in the quality of the national diet. It was also satisfactory to know from the report that the supply of energy-giving foods available for the nation was more than was considered adequate by the Committee of the League of Nations. The Government fully accepted the recommendation of the Advisory Committee that much more information was desirable and they were prepared to collect it. But such inquiries were not always so easy as was sometimes imagined. What the Government had in mind was really a three-fold inquiry. There was first the Ministry of Labour inquiry in connexion with the cost of living index figure. For this it was hoped to procure the weekly budgets of 10,000 families taken over four separate weeks in various parts of England, Wales, and Scotland. These families would all come from the classes covered by the national insurance schemes. Naturally the inquiry would comprise information besides that relating to food, but the special information relating to food would be summarised separately. Family budgets were made up as a rule in rather a rough-and-ready way. For certain purposes calculations of that sort might be quite sufficient, but when they were trying to find out about the number of calories, vitamins, carbohydrates, and so forth, that were consumed they could not afford to be rough-and-ready. Accordingly they proposed to check these results by another inquiry called a "quantitative dietary survey" which would be of a much more detailed character. It was in fact already in progress and would eventually embrace 500 families of which 200 would come from Scotland. This might appear to be a small number, but he would emphasise that a dietary survey of this kind meant that a qualified investigator had to spend much time in the homes of these families, weighing up all the food which came into the house, and what was left over, estimating its composition down to the constituents even of the cakes and puddings, and so forth, and noting any wastage. He thought they ought to be grateful to these families for coöperating with their inspectors to the extent that they had done. He (Lord Gage) could not give the dates by which the whole inquiry would be completed, but the results of the surveys which had already taken place at Newcastle-on-Tyne, affecting 69 families, had been published some months ago. There was another inquiry affecting 205 families in the West Riding, the results of which would probably be published by the end of this year. These were not included in the 500 families which he had mentioned. An inquiry had already been begun in the Isle of Ely, Surrey, Glossop, Aberdeen, and certain industrial towns near Glasgow. It would be extended to Somerset, Glamorgan, Carmarthen, Cardigan, Aberdeen County, Banff, Kincardine, Dumfries, and the Border Counties. The next step after that would be to take out from the last census figures a definite proportion, say of one in five hundred, or one in a thousand, of all the family census schedules, and this they expected would show roughly, after certain allowances had been made for altered conditions, the distribution of the population according to occupation. These statistics would then be compared with information in the possession of the Ministry of Labour with regard to wage rates current in such occupations. It was hoped that on this basis they would be able to correlate to some degree all these inquiries and to present a working analysis of how the incomes of various classes of the community were divided, with special reference to food.

He would now return to the third and most controversial question of how they could improve. He admitted that three-quarters of the problem must turn on the capacity of the people to buy the right foods, and that therefore food must be cheap. It was equally important that the people should have the wages to pay for the food. During their period of office the number of those in employment had increased by about 2,000,000. In one year over 2,350,000 had benefited from an increase of wages amounting to nearly £190,000 a week, and the price of essential foodstuffs, in spite of some rather wild statements to the contrary, had during the last five years remained fairly steady. Following the unanimous advice of their experts the Government had been particularly active in connexion with the supply of milk on special terms to special classes of the community, principally school-children, expectant mothers and infants and unemployed in the distressed areas. There were also schemes for the provision of free and cheap food to similar classes. The scheme for providing school-children with cheap milk which started in 1934 had now been made available to 92 per cent. of all the school-children in the country and 2,500,000 school-children were making use of the scheme. Free food might also be supplied to any child showing signs of requiring it, though certain safeguards obviously had to be observed in this connexion. Over 400,000 children received free milk last year, and 23,000,000 free meals were consumed by 143,000 children. About £700,000 was paid to the local authorities by the Government in specific grants towards these schemes. As to the mothers and infants, at all maternity and child welfare centres and at all antenatal clinics free food and milk might be supplied under medical advice to necessitous cases, special attention being paid to malnutrition, rickets, and so forth. There had been a large extension of these centres in the last few years and the attendances had greatly increased. Two hundred and ninety-seven thousand mothers now attended the clinics. Last year the equivalent of about 7,000,000 gallons of milk were distributed free, or at less than cost price, according to the means of the applicants. Schemes for cheap milk had been adopted in the Special Areas, the cost of which was borne in part by the Commissioner instead of by the local authorities.

As to the future he could undertake that the Government would press forward with all these schemes to the best of their ability. They had recently issued a circular inviting all the local authorities to review their arrangements under the Maternity and Child Welfare Acts and to improve and increase the diet, and especially the milk diet, of expectant mothers and children. They had also laid emphasis on the

necessity for securing the purity of the milk. A publicity campaign was contemplated in the autumn to make better known the existence of the facilities available at welfare centres. The Government had also put another £5,000,000 into the general pool available under the block grant scheme and by the reweighting of the formula they felt that the necessitous local authorities would be placed in a better position to bear their part of the financial burden. In conclusion he would like to say one word of what he might call subdued optimism. In the seventies of last century there was a death-rate of 21·4 per 1000. In 1936 the death-rate was 12·1 per 1000. In the nineties the death-rate of children under one year was over 150 per 1000. By 1936 this figure had been reduced to 59 per 1000. The death-rate from tuberculosis was less than half what it was twenty-five years ago, and from rickets less than half what it was five years ago. Of the 1,700,000 children inspected by school medical officers during 1936 the nutrition of 14·6 was said to be excellent, 74 per cent. were normal, 10·5 per cent. slightly abnormal, and 0·7 per cent. bad. These figures, he thought, showed that this country was making real progress, and were a general encouragement to further effort. The Minister of Health had shown the profound interest which he took in the problem of nutrition. Setting aside all questions of human sympathy, a vast amount of administrative effort which was now being spent on the cure and care of disease would obviously be immensely reduced if illness could be prevented, as the experts claimed it could be, by better nutrition. The Government had to assist them bodies of unimpeachable reputation such as the Medical Research Council and the Advisory Committee on Nutrition presided over by Lord Luke. All these factors seemed to indicate that if prosperity could be maintained progress in nutrition would also be maintained with increasing impetus.

Viscount ASTOR, in congratulating the Government on what they had done, urged them not to sit back satisfied, but to realise that there was still a great deal that required to be done.

The motion for Papers was withdrawn.

CONTRIBUTORY PENSIONS (VOLUNTARY CONTRIBUTORS) BILL

On the motion for the third reading of the Widows', Orphans', and Old Age Contributory Pensions (Voluntary Contributors) Bill in the House of Commons on May 6th,

Sir KINGSLEY WOOD, Minister of Health, said that this scheme had a very wide popular appeal and it would fill a definite gap in our existing social insurance system. So far as the insurance provisions were concerned, the Bill provided the best and cheapest and safest policy of the kind in the world. He hoped that it might soon be possible to introduce another measure which would fill another gap. The Government had already announced their intention to introduce national insurance legislation to entitle boys and girls to receive medical benefit immediately on taking up employment after leaving school instead of having to wait until the age of 16 as at present. The introduction of this measure had been postponed pending the settlement of the terms of remuneration of the medical practitioners. That question was going to be settled, he hoped, quite amicably and certainly by agreement, between the medical practitioners and himself by an arbitration court at an early date. He desired to see a good many gaps filled, but they had to recognise that the social protection of the people must be an evolutionary process. There were in Great Britain to-day more than 19,000,000 persons insured under the Contributory Pensions Acts, and if their dependents were taken into account it might be said that 75 per cent. of the population were protected by this scheme. Already 4,250,000 persons had participated in the pensions and allowances, and £350,000,000 had been paid out in benefits to persons under 70, while a further £170,000,000 had been paid to persons over 70 entitled to pensions by virtue of the Contributory Pensions Acts. The Exchequer contribution to the cost of pensions payable to persons under 70 was no less than £15,000,000 during the financial year 1936–37 alone. These contributions rose by £1,000,000 a year to £21,000,000 in 1942–43, at which figure they would remain until 1945–46, after which Parliament was to determine the further subventions required. The cost to the Exchequer in 1936–37 of pensions to those over 70 payable by virtue of the Contributory Pensions Acts was approximately £25,600,000 and the cost of the pensions to people over 70 payable under the Old Age Pensions Acts by reference to means was approximately £18,400,000. To those figures must now be added the considerable cost of this new scheme. If there were 700,000 entrants—and he would be disappointed if there were not—then, if they excluded the consideration of the financial commitments in respect of pensions for those over the age of 70, the Exchequer liability would be £43,000,000. They could legitimately claim that no country made such a financial contribution as we did or had a wider range of social protection for its people.

The Bill was read the third time and passed.

NOTES ON CURRENT TOPICS

In the House of Lords on May 6th the Royal Assent was given to the Local Government (Financial Provisions) (Scotland) Act; the Maternity Services (Scotland) Act; and the General Cemetery Act.

Both Houses of Parliament adjourned on May 6th for the Whitsuntide recess. The House of Lords will reassemble on May 25th and the House of Commons on May 24th.

QUESTION TIME

THURSDAY, MAY 6TH

Coöperation between Public and Voluntary Hospitals

Mr. SORENSON asked the Minister of Health whether, in view of the report of the Voluntary Hospitals Commission and of the increasing contributions by public authorities to voluntary hospitals, he would require that the finances of voluntary hospitals should be pooled and that greater coördination should be effected between voluntary and public hospitals.—Sir KINGSLEY WOOD replied: I have noted with interest that the Voluntary Hospitals Commission, while not recommending the immediate pooling of hospital finances, suggests the creation of regional funds, but I have no powers in this matter, which is one for consideration by the governing bodies of the hospitals. I may assure the hon. Member that I shall continue to encourage coöperation between voluntary and public hospitals, which, I am glad to say, is already increasing steadily.

Cleanliness in Handling of Bread

Sir NICHOLAS GRATTAN-DOYLE asked the Minister of Health whether, after the introduction of the recently announced legislation to provide that milk for human consumption should be clean and bacteriologically pure, he would consider means by which to ensure that bread for human consumption, whether in course of distribution or whilst held for sale, should at all times be covered or wrapped in dust-proof material to reduce uncleanliness by handling.—Sir KINGSLEY WOOD replied: I appreciate the advantages from the point of view of cleanliness of the wrapping of bread, but on the information before me I am not satisfied that a general requirement on the subject is necessary.

MATERNITY CLINIC FOR SUNDERLAND.—Sunderland health committee have approved in principle a scheme for erecting a maternity clinic in the east end of the town. An application will be made to the commissioner of the Special Areas for a grant towards the estimated cost of £10,000.

PUBLIC HEALTH

Circular on Maternal Mortality Report

IN a circular (No. 1622) addressed to maternity and child welfare authorities on May 7th the Minister of Health draws attention to the report on maternal mortality summarised in THE LANCET last week (p. 1125) especially to the recommendations emphasising (1) the importance of team-work; (2) consultant services; (3) emergency units; (4) maternity accommodation; (5) antenatal services; (6) postnatal services; (7) ancillary services; (8) the keeping of records; (9) education. The Minister notes that recommendation (2) in Section X of the report contemplates that each local supervising authority under the Midwives Acts should, in consultation with the local medical profession, be empowered to take steps to ensure that the best local obstetric skill is made available in all cases in which midwives are required to call in a doctor. An alteration in the rules of the Central Midwives Board would be required before effect could be given to this recommendation, and the Minister has asked the Board to consider the recommendation. He is also inviting the views of the associations of local authorities concerned, and of the British Medical Association, on this recommendation (see below). As to the three subjects recommended in the report for further study, the Minister is in communication with the Medical Research Council on the suggestions that further research should be undertaken (*a*) with a view to the discovery of a reliable prophylactic treatment for puerperal sepsis, and (*b*) into the possible influence of the dietary upon childbearing. With regard to the third subject recommended for further inquiry, that of abortion, the Secretary of State for the Home Department and the Minister are appointing a committee to inquire into the prevalence of abortion and to consider the steps necessary to secure the reduction of maternal mortality and morbidity arising from this cause. The Minister asks each authority to give early consideration to the report and to the suggestions made in the circular, and inform him of the action they propose to take.

THE VIEWS OF THE BRITISH MEDICAL ASSOCIATION

The British Medical Association has already, in an addendum to the annual report of their council published in the Supplement to the *British Medical Journal* of May 8th, said that the suggested amendment of the rules of the Central Midwives Board is not one that could be approved or supported by the Association. The proposal that midwives in the future would in cases of emergency be able to call for the services only of certain selected practitioners, and that local authorities should be advised and encouraged to make such selective lists, would, in the opinion of the Association, aggravate the disadvantages of the present situation. They call attention to three inconsistencies which might immediately arise:

(1) Many insurance practitioners would be by statute charged with the *duty* of attending or accepting responsibility for insured women from the time conception took place up to the moment that labour pains began, and again from ten or fourteen days after delivery, while they would be prohibited, if the mother wished to take advantage of State provision, from having anything to do with her in the intervening period.

(2) There would be practitioners in some areas freely available for attendance in the case of midwives' "emergencies," while in a neighbouring area they might be debarred from any such attendance owing to alleged incompetence or inexperience.

(3) In one area in 3 per cent. of all confinements the emergency was such as to require the *immediate* attendance of a practitioner in order to save the life of mother or child, so that in many rural areas the midwife might, by rule, be prohibited from calling in the most easily available practitioner.

An alternative plan which the council of the Association greatly prefers and would urge upon the Minister is that each local authority should prepare a list of local medical practitioners who are willing to make themselves available to be called in by midwives, that such practitioners collectively should at once be brought into close touch with the consultant obstetricians recognised for the service in the area, and should be kept in frequent association with those consultants with a view to the appreciation of their several spheres of action, to instruction as to the proper course of action and the means of securing appropriate help in cases of difficulty, and to the mutual and confidential investigations as to the causes of difficulty or of death. If thought necessary it might be arranged that, if a practitioner's name was to continue on the list beyond a certain period of years, he should have to undertake a more formal post-graduate course in obstetrics; and it might be possible to establish some machinery by which the name of a practitioner whose work proved unsatisfactory might be removed from the list. In some such way as this the council believes that local lists would be established in a less objectionable and less difficult way than in any other, and that the lists so established under these conditions would prove to be more satisfactory and successful in maintaining an adequate service. The council suggests that such lists should be established at the time, or shortly after the time, at which the Midwives Act comes into operation.

Supervision of Midwives

With another circular (1620) the Minister encloses, for the information of local supervising authorities under the Midwives Acts (England), copies of the regulations[1] which he has made, prescribing the qualifications of persons appointed to exercise supervision over the midwives practising in their areas. The regulations will come into operation on June 1st next, and apply only to persons appointed as supervisors of midwives on or after that date. The object of the regulations is to ensure that persons appointed in future to supervise midwives shall have had adequate experience in the practice of midwifery. In order that an inspector of midwives should be regarded as the counsellor and friend rather than a relentless critic, the persons appointed should not only possess the necessary professional qualifications but also the essential qualities of sympathy and tact. The title of "inspector of midwives" will be superseded by that of "supervisor of midwives," which is that used in the regulations. The regulations prescribe qualifications for a medical supervisor, and a non-medical supervisor, and it is within the discretion of each authority to appoint either one or the other, or both. In large areas it appears to the Minister desirable to appoint a medical supervisor, acting under the direction of the medical officer of health, to exercise general supervision over the

[1] Statutory Rules and Orders, 1937, No. 398. The Midwives (Qualifications of Supervisors) Regulations, 1937, dated April 29th, 1937.

midwives practising in the area, and non-medical supervisors to work under the instructions of the medical supervisor and perform the routine duties of supervision.

A medical supervisor is defined as a registered medical practitioner who has had at least three years' experience in the practice of his profession, and who (1) is registered as the holder of a diploma in sanitary science, public health, or State medicine, (2) has held the appointment of resident medical officer in a maternity department for a period of not less than six months, and (3) within a period of two years before his first appointment as a medical supervisor under the provisions of these regulations had had not less than one year's continuous experience in some branch of obstetric work. The Minister may dispense with any of the requirements of these regulations in any case in which it appears to him desirable so to do, on such terms and conditions as he thinks fit. The Minister appreciates that at the outset it may be difficult in some cases to secure medical supervisors who possess all these qualifications and if necessary he will be prepared to consider the question of using his dispensing power. He points out, however, that the words "some branch of obstetric work" have a wide range, and include the conduct of ante-natal clinics, the duties of administrative officers in a maternity department, the investigation or treatment of puerperal fever, obstetric research, and so forth.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 1ST, 1937

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 1628; diphtheria, 1019; enteric fever, 26; pneumonia (primary or influenzal), 856; puerperal fever, 38; puerperal pyrexia, 98; cerebro-spinal fever, 30; acute poliomyelitis, 2; acute polio-encephalitis, 1; encephalitis lethargica, 5; dysentery, 14; ophthalmia neonatorum, 102. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on May 7th was 3069 which included: Scarlet fever, 799; diphtheria, 866; measles, 55; whooping-cough, 505; puerperal fever, 16 mothers (plus 11 babies); encephalitis lethargica, 283; poliomyelitis, 0. At St. Margaret's Hospital there were 21 babies (plus 10 mothers) with ophthalmia neonatorum.

Deaths.—In 123 great towns, including London, there was no death from small-pox or from enteric fever, 18 (0) from measles, 3 (0) from scarlet fever, 18 (4) from whooping-cough, 30 (3) from diphtheria, 48 (12) from diarrhœa and enteritis under two years, and 33 (3) from influenza. The figures in parentheses are those for London itself.

Five deaths from diarrhœa and enteritis under two years were reported from Liverpool, and 3 each from Manchester and Newcastle-upon-Tyne. Birmingham had 5 deaths from measles. Sheffield and Bradford each reported 3 fatal cases of diphtheria.

The number of stillbirths notified during the week was 284 (corresponding to a rate of 41 per 1000 total births), including 46 in London.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Capts. J. H. Burdett to *Pembroke* for R.N. Hosp., Chatham; and J. D. Danson to *Victory* for R.N. Hosp., Haslar.

Surg. Lt.-Comdrs. J. B. Patrick to *President* for course; and C. D. D. de Labilliere to *Pembroke* for R.N.B.

Surg. Lts. G. C. Denny to *Excellent*; W. B. Taylor to *President* for course; J. G. Vincent Smith to *Pembroke* for R.M. Infirmary, Chatham; I. C. Macdonald to *Pembroke* for R.N.B.; and D. Simpson to *Victory* for R.N. Hosp., Haslar.

F. B. Gamblen and J. B. Knight entered as Surg. Lts. (D) for short service, and appointed to *Victory* for course of instruction at R.N. Hosp., Haslar.

The following have been appointed Admiralty Surgeons and Agents:—

Mr. J. W. Ross (Darlington) for Darlington; Mr. T. C. Gipson (Pinhoe, Exeter) for Exeter; and Mr. R. Anderson (Helensburgh) for Helensburgh.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt.-Comdr. (D) G. P. Monk placed on Retd. List.

Surg. Sub-Lt. R. F. Hand promoted to Surg. Lt.

ROYAL ARMY MEDICAL CORPS

Capts. A. McMillan and W. G. S. Foster to be Majs.

Lts. C. P. Stevens and J. A. G. M. Lynch to be Capts.

SUPPLEMENTARY RESERVE OF OFFICERS

J. Robertson to be Lt.

ARMY DENTAL CORPS

Capt. A. Brazenor to be Maj.

Short Service Commission: E. A. Moore to be Lt. (on prob.).

MILITIA

Maj. R. D. Goldie relinquishes his commn. and retains the rank of Maj.

TERRITORIAL ARMY

Capt. E. J. G. Glass to be Maj.

T. Fitt (late Cadet Serjt., Rossall Sch. Contgt., Jun. Div., O.T.C.) to be Lt.

R. H. Barnes (late Cadet Serjt., Bedford Sch. Contgt., Jun. Div., O.T.C.) to be Lt.

J. D. Finlayson (late Offr. Cadet, Aberdeen Univ. Contgt. (Med. Unit), Sen. Div., O.T.C) to be Lt.

TERRITORIAL ARMY RESERVE OF OFFICERS

Lt. A. Wilson, from T. A. Res. of Off. (5th Bn. Border R.), to be Lt. (Army Dental Corps).

ROYAL AIR FORCE

Squadron Leaders H. W. Corner to R.A.F. Depôt, Uxbridge, for duty as medical officer; J. Hutchieson to R.A.F. Station, Dhibban, Iraq, for duty as Senior Medical Officer; and G. W. Paton to Aircraft Depôt, Hinaidi, Iraq, for duty as Senior Medical Officer.

Flight Lt. R. C. H. Tripp to R.A.F. Station, Upper Heyford.

Flying Offr. F. L. Whitehead is promoted to the rank of Flight Lt.

INDIAN MEDICAL SERVICE

Majs. to be Lt.-Cols.: S. N. Makand, S. C. Alagappan, and B. R. Chaudhri.

Capt. M. P. Conroy to be Maj.

The undermentioned officers have vacated appts. in India:—

D.D.M.S.: Maj.-Gen. C. W. F. Melville, C.B., K.H.P., I.M.S., and retires.

A.D.M.S.: Col. I. M. Macrea, C.I.E., O.B.E., K.H.P., I.M.S.; and Maj.-Gen. W. H. Hamilton, C.I.E., C.B.E., D.S.O., K.H.P., I.M.S.

A.D.H. and P.: Lt.-Col. J. B. de W. Molony, O.B.E., I.M.S.

D.A.D.P.: Major J. S. Riddle, I.M.S.

The undermentioned appts. have been made in India:—

D.D.M.S.: Maj.-Gen. W. H. Hamilton and Col. I. M. Macrae.

A.D.M.S.: Col. A. F. Babonau, C.I.E., O.B.E., I.M.S.

D.A.D.P.: Maj. H. T. Findlay, R.A.M.C.

COLONIAL MEDICAL SERVICE

The following appointments have been made: Dr. E. N. Brockway and Dr. C. J. Fournier (M.O., Bermuda) Medical Officers, West Africa; Miss E. Cardwell, L.R.C.P. and S., and Dr. H. J. Bermingham (M.O., Gambia) Medical Officers, Gold Coast; Dr. R. H. Purnell, Medical Officer, and Dr. J. A. Acheson (M.O.) Senior Medical Officer, Northern Rhodesia; Dr. A. A. Cameron, Medical Officer, Malaya; and Surg. Lt. S. R. G. Pimm, Medical Radiologist, Colonial Hospital, Port of Spain, Trinidad.

OBITUARY

BENNETT MAY, C.B.E., F.R.C.S. Eng.

EMERITUS PROFESSOR OF SURGERY, UNIVERSITY OF BIRMINGHAM

THE death occurred on May 3rd of Mr. Bennett May, emeritus professor of surgery in the University of Birmingham and one of the oldest members of the medical profession, having reached the advanced age of 92. He died at his house in Edgbaston.

Prof. May was the son of Benjamin May, an official of the Inland Revenue, and was educated at Sydenham College, before proceeding to the University of Edinburgh for his medical education. He graduated as M.B., B.S. Lond. in 1875 and took the F.R.C.S. Eng. in the following year. He then became resident surgical officer at the Birmingham General Hospital, at the termination of which appointment he became assistant surgeon to the Queen's Hospital, Birmingham. His association with the University of Birmingham, then Mason College, began as a demonstrator in anatomy, but his surgical work soon brought him a large consulting practice, while he was invited to fulfil important appointments outside Birmingham, such as surgeon to the Smallwood Hospital, Redditch, the Guest Hospital, Dudley, and the Tamworth Hospital. He was appointed demonstrator of operative surgery at Mason College, and on the establishment of the University of Birmingham became professor of surgery in the University. He made now some important clinical contributions to medical literature, writing in the *British Medical Journal* on the ligature of arterial trunks and to these columns valuable clinical notes, among others a description of distal ligature of the common carotid and axillary arteries for aneurysm, and one for the excision of a tumour of the cerebellum. In 1897 he delivered the Ingleby lectures on the operative treatment of cancer of the breast, the lectures being afterwards published in volume form. During the war, despite his seniority, he gave outstanding service at the Rubery Hospital.

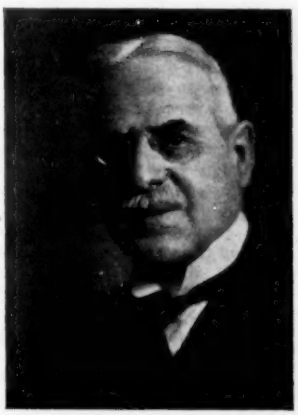
Prof. May was a widower and leaves no family. During the last years of his long life he was invalided by arthritis.

Sir Gilbert Barling sends the following tribute to Prof. May's work and fine personality: "Bennett May commenced his medical studies as long ago as 1864 at the Sydenham College which was attached to the General Hospital, Birmingham. In 1870 he was appointed to the valuable post of resident surgical officer with the supervision of all the surgical beds, a position which he filled for three years, and which formed the foundation of all his future success. He came to the practice of his profession in what may be called the transitional period when Lister's early teaching began to have its influence and at a time when 'laudable pus' was almost regarded as a compliment to the surgeon, and when all surgical operations were approached with an anxiety difficult to appreciate now, for the threat of bad sepsis and even hospital gangrene was always present. And no wonder, when amongst other detrimental conditions the surgeon was generally garbed in an old coat soiled with blood or even pus. May, unlike his older predecessors, was guided in his work by Lister's teaching, that is he adopted 'the antiseptic system,' but hardly the minutiæ of 'asepsis.' To his disappointment he failed to secure a post as assistant surgeon to the General Hospital but found his opportunity at the Queen's Hospital when he was elected surgeon in 1881, and here he soon showed his worth. Rather a slow operator, he was most painstaking and thorough, his opinions were very reliable, and he gave confidence to members of the profession who sought his advice in consultation. He taught anatomy at Queen's College and eventually became professor of surgery in Mason College and the University of Birmingham, where I was his co-professor, and I more than ever learnt to appreciate him as an excellent colleague and a very honourable man. He was at times a little eccentric in his mannerisms and students did not fail to exploit these, but despite peculiarities he acquired the respect, indeed the affectionate regard, of those he taught.

"During the war I had special reason to be grateful to him. In 1915 I organised two war hospitals in Birmingham, and eventually these provided nearly 2000 beds. At that time it was not easy to secure an adequate surgical staff as nearly all the general surgeons in Birmingham were either on service abroad or attached to the 1st Southern T. Hospital. May had entirely given up practice, and was then 70 years of age, but at my request he took charge of a large section of beds and simply devoted himself to looking after them. For his services he was given the C.B.E In his later years he was greatly crippled by arthritis, indeed he was bedridden during the last five years; this and his increasing deafness cut him off from his friends and he became very solitary. His death came as a real relief from distress; he will long be remembered with affection."

SIR GEORGE WASHINGTON BADGEROW, C.V.O., C.M.G., M.D. Toronto, F.R.C.S. Edin.

THE sudden death occurred on Sunday last of Sir George Badgerow, a laryngologist equally well known in this country and in his native country of Canada. He was born in 1872, the son of Mr. Harrington Badgerow of Toronto, and was educated at Upper Canada College and the University of Toronto. He received his medical training partly at the Toronto General Hospital and partly at the University of Edinburgh, and he was also a student at the Middlesex and University College Hospitals. He took the English double qualification in 1903 and two years later graduated as M.B. Toronto with honours, proceeding to the M.D. degree in 1909 and taking the diploma of F.R.C.S. Edin. in 1910. He early decided to specialise in diseases of the throat, nose, and ear, and became chief clinical assistant in the department at University College Hospital. He then acted as clinical assistant and registrar at the Throat Hospital, Golden-square, becoming later resident medical officer, posts which he held from 1903–08. He made during this period and later practical contributions to the literature of his subject, describing in our



[*Photograph by Elliott & Fry*

SIR GEORGE BADGEROW

columns several ingenious appliances useful in operative treatment, while he wrote in the *Practitioner* and also in *The Lancet* on the types of pharyngeal suppuration and on the general relation of diseases of the throat, nose, and ear to constitutional disease. He was appointed surgeon to the Golden-square Hospital and acted also as dean. He did fine service during the war as lieutenant-colonel in the Canadian Army Medical Corps, both in the field and in institutional positions. He was mentioned twice in dispatches and at the conclusion of hostilities received the C.M.G. He was consulting surgeon to the Ontario Military Hospital, Orpington, to the Duchess of Connaught Red Cross Hospital, Cliveden, the King's Canadian Hospital, Bushey, and the Officers' (Daughters of the Empire) Hospital. He was a member of the Imperial War Graves Commission. In 1928 he was knighted and in 1930 was appointed C.V.O.

Sir George Badgerow was active in many provinces of his specialty. He was honorary surgeon for the diseases of the throat, nose, and ear to the Royal Normal College for the Blind, to the Livingstone Hospital, Dartford, and to the Warehouse Clerks' and Drapers' Schools, Purley; he was a member of the Education Committee, L.C.C., of the Residential Open-air School in Bushey Park, and consulting surgeon to the Reedham Orphanage. It will be readily understood how well known he was in his profession as well as to all Canadians resident in or visiting England. He married Maud, daughter of Mr. Herbert Oxley, who died recently, and leaves a son and a daughter. His death was tragically sudden; he collapsed in a taxi-cab and was found unconscious at Waterloo Station. Conveyed to St. Thomas's Hospital he was found to be dead. He was 64 years of age.

CORRESPONDENCE

CONTINUOUS VENOUS HUM IN CIRRHOSIS OF THE LIVER

To the Editor of THE LANCET

SIR,—In your issue of May 8th Dr. J. L. Bates records an interesting case of continuous venous hum in cirrhosis of the liver, the exact cause of which has not yet been confirmed at autopsy.

Some years ago I had under my care at the Sheffield Royal Hospital a case of cirrhosis of the liver with a somewhat similar localised venous hum. In my case it was possible to correlate the physical signs in life with the findings at autopsy. The loud and continuous venous hum in the earlier stages (1916) extended over the xiphisternum up to the level of the third costal cartilage with an area of maximum intensity over the former. Five years later (1921), when the ascites had all disappeared, the sound was sharply circumscribed to an area covered by a half-crown at the right of the sternum opposite about the sixth chondrosternal junction. At autopsy in 1924 there was a monolobular cirrhosis. The left portal vein was much dilated and communicated by a circuitous course through the round and falciform ligaments with the right internal mammary vein, which showed marked varicose dilatations. As this vessel was lying immediately under the place where the venous bruit was of maximum intensity, it seemed, on these grounds alone, to be the most likely source of the sound, and this view was supported by the sudden variations in diameter of its lumen, from narrow to wide, thus providing the requisite physical conditions which Dr. Bates mentions—namely, "the passage of blood through a constricted lumen into a relatively dilated channel."

An almost exactly similar condition was found in a case of Ogle's, quoted in Rolleston's text-book (1912 edition), and apparently others of a somewhat similar kind to that described in Dr. Bates's interesting record have been added in the later edition, to which I have not had an opportunity of referring. An account of my case, during life, was published in the *British Medical Journal* for April 15th, 1922.

I am, Sir, yours faithfully,

Sheffield, May 7th. ARTHUR J. HALL.

PERNICIOUS ANÆMIA IN AN INFANT

To the Editor of THE LANCET

SIR,—Dr. Smallwood's letter, in which he questions the correctness of the diagnosis of pernicious anæmia in the infant whose case was recorded by Langmead and Doniach in your issue of May 1st, does not mention whether any of his cases of acute or subacute hæmolytic anæmia showed achlorhydria following injection of histamine. Of the previously recorded cases of pernicious anæmia in infants, few, if any, have fulfilled all the postulates required in the diagnosis of this disease. The case recorded by Langmead and Doniach fulfils all of them. Should the infant, at a later date, be able to thrive without liver therapy, it could reasonably be maintained that the syndrome had been caused by a temporary cessation of ability either to elaborate, or else to absorb the antipernicious anæmia factor. An analogous situation may arise in cœliac disease.[1] The criteria of the diagnosis of pernicious anæmia,[1] quoted by Langmead and Doniach, could have with advantage suggested achlorhydria following histamine injection.

I am, Sir, yours faithfully,

London, W.1, May 7th. J. C. HAWKSLEY.

PRURITUS ANI

To the Editor of THE LANCET

SIR,—In recent issues of your paper I read interesting references to this subject, and it seems obvious that the treatment of pruritus ani is still wrapped in obscurity. I wrote to THE LANCET in 1923 (Sept. 29th, 1923, p. 678) recording the treatment which had been successful in my own case many years before. I then consulted Sir Charles (then Mr.) Gordon-Watson who held the view that the cause of this trouble lies in the papillæ of Morgagni, which, situated at the anorectal junction, are absent in the majority yet present in a considerable proportion of individuals. They are normally small white glistening papillæ, pyramidal or triangular, with the apices directed upwards and inwards towards the lumen of the gut. They vary from one to six, and when hypertrophied resemble in size and shape the writing end of an ordinary lead pencil; when much hypertrophied they may be felt as small shotty nodules. In some cases one finds small fibrous branched papillæ as well; and I think it is advisable to destroy these also as they may possibly be an additional source of irritation. In my own case, Sir Charles Gordon-Watson destroyed these hypertrophied papillæ with the electric cautery. This was done without even a local analgesic and was not very painful. The itching, which had become unbearable, disappeared

[1] Parsons, L. G., and Hawksley, J. C. (1933) *Arch. Dis. Childh.* **8**, 117.

at once like magic, and I remained absolutely free for about five years. There was then a slight return occasionally, but carbolic vaseline kept it in check. Later on, as the pruritus had again become rather troublesome, I was examined by a surgeon, having first told him what he would probably find. He destroyed five or six papillæ with instantaneous results, and has since treated four similar cases with equally good effects. The reappearance of a papilla is in my case always attended by a return of the pruritus and discharge of irritating mucus which rapidly causes the skin to inflame.

I would add now that I have found that repeated cauterisations of the papillæ of Morgagni deprive one of the sensitive area which gives warning of the presence of a stool at the anal orifice; and occasionally if one had diarrhœa, an "accident" was likely to occur. This is, of course, one of the results which is apt to follow Whitehead's operation for piles or prolapse of the rectum.

I am, Sir, yours faithfully,

F. J. W. PORTER,
Major, R.A.M.C., retired.

Tangier, May 1st.

FREE MILK AND CHEAP MILK

To the Editor of THE LANCET

SIR,—Following the report of the Advisory Committee on Nutrition, the Ministry of Health last month circularised maternity and child welfare authorities asking them to review their arrangements for the supply of milk and other foods to mothers and young children. May we comment on some of the issues involved?

In many areas pregnant or nursing mothers and children under school age cannot obtain free milk unless the family income falls beneath a very low level. We know of authorities where the income (after deduction of rent) for a family of five must be as low as 25*s.* or even 22*s.* 6*d.* a week before free milk is granted. But the circular, in urging that "scales should be so framed as not to render it difficult for mothers to take advantage of the authorities' arrangements," does not itself suggest any basis on which this should be done. Such a basis might be found in the British Medical Association's estimate of the minimum costs of satisfying food requirements, as revised to conform with the milk recommendations of the Advisory Committee on Nutrition. If, however, the Minister feels that he cannot accept these estimates, we suggest that he should ask the Advisory Committee itself to draw up, for the guidance of local authorities, a scale based on the present knowledge of food requirements. Estimates for necessities other than food, such as have been used in the various social surveys, could be added, and the scale adjusted to changes in prices from time to time and place to place.

The report of the Advisory Committee indicates that on health grounds milk (or its equivalent in other protective foods) is necessary for all pregnant and nursing mothers and young children. However, under most local authorities, even after a stringent income test has been satisfied, milk and other foods are only supplied free if clinical symptoms are discovered showing the need for additional nourishment. Should not local authorities be asked to provide free milk wherever the income available for expenditure on food is insufficient, and thereby anticipate the dangers of undernourishment before health is actually impaired?

The Minister's circular which seeks to implement the report of the Advisory Committee is valuable in encouraging local authorities to remove some of their restrictions: but further measures will undoubtedly be required if we are to secure that "largely increased consumption of safe milk by mothers, children, and adolescents," which the Committee states would do more than anything else to improve the health, development, and resistance to disease of the rising generation.

The onus for extending the provision of milk remains on the local authorities, who will have to pay the whole cost of such an extension out of the rates. It is true that the poorer authorities have benefited by the recent revision of the block grant, but such relief is required for many purposes, including the reduction of rates raised to unprecedented heights by years of severe unemployment.

Measures on an extensive scale will be needed if the hope of the Advisory Committee that a "supply of safe milk to the amount (we have) recommended is brought within the purchasing power of the poorest" is to be fulfilled. These amounts are 2 pints a day for expectant and nursing mothers and from 1 to 2 pints a day for each child. With milk at 3½*d.* a pint, a family in which there were three children taking, say, 1½ pints a day, and a mother taking 2 pints, would have a bill of 13*s.* 3½*d.* a week. Such an expenditure is, as recent surveys show, quite beyond the means of most working-class families with young children.

At present about one-third of the milk produced is sold for manufacture at an average subsidised price of 5½*d.* a gallon, whereas it is only available for liquid consumption at a price which puts a sufficient quantity for health beyond the reach of many families. It is understood that the Government are considering a scheme for extending the provision of cheap milk to mothers and children under school age. We very much hope that a result of the report of the Advisory Committee will be its early initiation.

We are, Sir, yours faithfully,

F. D. ACLAND,
SUSAN LAWRENCE,
ELEANOR F. RATHBONE,
DUNCAN SANDYS.

The Children's Minimum Council, 72, Horseferry-road, London, S.W.1, May 7th.

PRISONERS AND CAPTIVES

To the Editor of THE LANCET

SIR,—Despite your mental hospital correspondent, who so vigorously championed the statutory hospitals against Taddygaddy, in your issue of May 1st, is there not a subtle difference? Is it perhaps a matter of the limelight focused on the "voluntary" institutions owing to the continual fight for funds? The public develops an almost parental feeling of responsibility: not only does it support financially, it protects, cherishes, excuses. Statutory hospitals still contend against a remnant of suspicion. The tradition of the locked-door, the inferiority stigma has not yet vanished. The governing bodies are recruited with a difference: members of county or borough councils must be rationed out over the work to be done and the hospitals committee may perhaps be the Cinderella that gets the leavings. At any rate there seems to be less opportunity for detailed intercourse, intimate knowledge, personal contact: they all have too much to do.

At a recent opening of a municipal hospital the equipment shown was superb but where were the local doctors and their wives and their friends? It was a different crowd: it nearly always is. If

Taddygaddy and your correspondent are both right surely an urgent and immediate task ahead is to find a way of amalgamating "atmospherics" or at least of demonstrating that no real difference need exist.

I am, Sir, yours faithfully,

ESTHER CARLING.

Berks and Bucks Joint Sanatorium, Oxon, May 6th.

To the Editor of THE LANCET

SIR,—Taddygaddy fain would raise a storm. Will there be pennies from Heaven? Authority, in spite of all the gossips, is not too mean a deity.

There is, of course, much of truth in Taddygaddy, much to welcome. Nevertheless, whensoever we seek to preach this freedom, ought we not first to ask with Nietzsche: "*Freedom for what?*"?

I am, Sir, yours faithfully,

Birmingham, May 10th. H. FREIZE STEPHENS.

INSULIN SHOCK TREATMENT OF SCHIZOPHRENIA

To the Editor of THE LANCET

SIR,—In the excellent account of insulin shock in schizophrenia given by James, Freudenberg, and Cannon in your last issue, the question of depth of coma arises. Coma is rightly defined as a period of unconsciousness, but the differentiation of depths of coma is rather at variance with that set out in Dr. I. G. H. Wilson's report and so may lead to confusion. James and his collaborators define coma as "unconsciousness," deep coma being characterised by loss of corneal and plantar reflexes and also by hypotonus. Dr. Wilson describes "light coma," coma with restlessness and all reflexes present; coma proper, in which hypo- or hyper-tonus is seen and in which the corneal reflex is absent; "deep coma," in which the pupillary light reflex is lost. I feel that this difference should be emphasised, as any attempt to prolong this latter form of deep coma for the 1½ hours permissible for the deep coma of James, Freudenberg, and Cannon would undoubtedly be disastrous.

The "coma" mentioned in the very brief note on method in my report on cases, being unqualified, simply means "period of unconsciousness." When this is 2½ hours it is usual to find, with proper dosage of insulin, that 1 hour is spent in light coma and 1½ in coma proper. I cannot agree that hypertonus in general extension is an imperative indication for interruption and have frequently seen this and allowed hypoglycæmia to continue for the usual length of time: some cases have shown this daily.

I am, Sir, yours faithfully,

LEONARD W. RUSSELL.

St. Bernard's Hospital, Southall, May 10th.

EAST HAM MEMORIAL HOSPITAL.—This hospital is now free from debt for the first time in its history. In 1935 it had a deficit of £18,000; half of this sum was given by Lord Bethell, the president, and the other half by the public. A new children's ward is required and Lord Bethell has offered to meet half its cost in commemoration of the Coronation.

NATIONAL HOSPITAL FOR NERVOUS DISEASES.—Princess Alice, Countess of Athlone, has laid the foundation-stone of the extensions to this hospital which have been made possible by a grant from the Rockefeller Trust. The extensions will be devoted to the work of the clinical research unit, while facilities for neurosurgical work and some small wards for paying patients will also be provided.

CORONATION HONOURS

THE list of honours bestowed by the King at his Coronation contains the following names of members of the medical profession:—

Baron

The Rt. Hon. Christopher Addison, F.R.C.S.
First Minister of Health (1919–21).

Baronet

Sir Cuthbert Wallace, K.C.M.G., C.B., M.B.
President of the Royal College of Surgeons.

K.C.B.

Edward Mellanby, F.R.C.P., F.R.S.
Secretary of the Medical Research Council.

K.C.V.O.

Sir John Atkins, K.C.M.G., F.R.C.S.
Physician-in-Ordinary to the Duke of Connaught.

George Frederic Still, F.R.C.P.
Consulting physician for diseases of children, King's College Hospital.

K.B.E. (Military)

Air Vice-Marshal Alfred William Iredell, C.B., M.R.C.S., K.H.P.
Director of medical services, Air Ministry.

K.B.E. (Civil)

The Hon. John Richards Harris, M.D.
Minister of Public Health, Victoria.

Knights Bachelor

Arthur Edwin Horn, C.M.G., M.R.C.P.
Consulting physician to the Colonial Office.

Arthur Frederick Hurst, F.R.C.P.
Senior physician to Guy's Hospital.

Harold Beckwith Whitehouse, F.R.C.S.
Professor of midwifery, University of Birmingham.

C.B. (Military)

Surgeon Rear-Admiral G. L. Buckeridge, O.B.E., M.R.C.S., K.H.S.

Major-General W. H. Hamilton, C.I.E., C.B.E., D.S.O., F.R.C.S., K.H.P., I.M.S.
D.D.M.S., Northern Command, India.

Major-General Osburne Ievers, D.S.O., M.B., K.H.S.
D.D.M.S., Southern Command.

Major-General H. Marrian Perry, O.B.E., L.R.C.P.I., K.H.S.
Director of Royal Army Medical College.

Air Commodore A. V. J. Richardson, O.B.E., M.B., K.H.S.

C.B. (Civil)

John Harry Hebb, C.B.E., M.B.
Director-general of medical services, Ministry of Pensions.

C.M.G.

Robert Henry Hogg, O.B.E., M.B.
President of New Zealand branch of B.M.A.

C.I.E.

Lieut.-Colonel Ronald Herbert Candy, M.B., I.M.S.
Civil surgeon, Poona.

Ernest Muir, M.D., F.R.C.S.E.
Secretary, British Empire Leprosy Relief Association.

Lieut.-Colonel Clive Newcomb, D.M., F.I.C., I.M.S.
Principal of the Medical College, Madras.

Colonel John Taylor, D.S.O., M.D., V.H.S., I.M.S.
Director of Central Research Institute, Kasauli.

C.B.E. (Military)

Surgeon Captain William Bradbury, D.S.O., M.B., R.N.

Colonel John Heatly-Spencer, O.B.E., F.R.C.P., K.H.P.
Professor of tropical medicine, R.A.M. College.

C.B.E. (Civil)

Edgar Leigh Collis, M.R.C.P., J.P.
Emeritus professor of preventive medicine, University of Wales.

George Carter Cossar, M.C., L.R.C.P.E.
Founder of Todhills Farm Colony.

Peter Sinclair Hunter, M.B.
Municipal health officer, Singapore.

James Lochhead, O.B.E., F.R.C.S.
Senior medical officer, Gibraltar.

James Perrins Major, M.D.
Hon. secretary of Victorian branch of B.M.A.

O.B.E. (Military)

Major David Fettes, F.R.C.S.E., R.A.M.C.

Major Frank Holmes, M.B., R.A.M.C.

Captain Trevor Edward Palmer, M.B., I.M.S.
Late M.O., British Legation guard, Addis Ababa.

Surgeon Captain James Bruce Ronaldson, V.D., M.D., R.N.V.R.

Wing-Commander Alan Filmer Rook, M.R.C.P., R.A.F.

Surgeon Commander John Wylie, M.B., R.N.

O.B.E. (Civil)

C. R. Cooke-Taylor, M.R.C.S., D.P.M.
Parliamentary candidate for Dulwich.

John Merrill Cruikshank, M.D.
Chief medical officer, Bahamas.

Owen Wynne Griffith, L.R.C.P., J.P.
Eleven times mayor of Pwllheli.

John Daniel Harmer, F.R.C.S.
Surgical specialist, Northern Rhodesia.

David Hynd, M.B.
Of Bremersdorp, Swaziland.

Major G. M. Moffatt, L.R.C.P.I., I.M.S.
Civil surgeon, Lashio, Burma.

Mrs. Dorothy Mary Roberts, M.B.
Of Bishopsbourne, Straits Settlements.

Lieut.-Colonel John Rodger, M.C., M.B., I.M.S.
Chief medical officer in Baluchistan.

George Waugh Scott, M.D.
Of Sungei Siput, Perak, F.M.S.

Lieut.-Colonel P. H. S. Smith, M.B., I.M.S.
Superintendent, Central Jail, Haripur, N.W.F.

Imperial Service Order

Herbert Rendell, M.B.
Formerly superintendent of tuberculosis sanatorium, Newfoundland.

M.B.E. (Military)

Captain A. G. D. Whyte, M.B., R.A.M.C.

M.B.E. (Civil)

Percy William Barnden, M.R.C.S.
Medical officer, Sudan United Mission.

Miss Harriett Biffin, M.S.
Of New South Wales.

Thomas Bertram Butcher, M.R.C.S.
Hon. surgeon superintendent, Cottage Hospital, Mussoorie, United Provinces.

Major Francis Joseph D'Rose, I.M.D.
Civil surgeon, Myaungmya, Burma.

Atul Chandra Dutta, L.M.S.
Late medical officer, Malacca, Straits Settlements.

Birendra Nath Ghosh, F.R.F.P.S.
Medical practitioner, Bengal.

Barjor Framji Khambatta, M.B.
Port health officer, Karachi.

Kaisar-i-Hind Medal

Jehangir Ardeshir Anklesaria, M.B.
Port health officer, Rangoon.

THE LANCET 100 YEARS AGO

May 20th, 1837, *p.* 315.

From the report of a paper on malignant diseases of the skin of the face read by Mr. CÆSAR HAWKINS *at a meeting of the Royal Medical and Chirurgical Society held on May 9th*, 1837.—DR. BRIGHT, *President.*

. . . The term "malignant" disease, however, having been employed in a very vague and ill-defined manner, the author commences by stating, that he restricts the term "malignant" to such diseases as essentially possess a new structure, capable of exerting a poisonous influence in one or more of these several degrees; 1st, upon the neighbouring textures, which are converted into a substance exactly similar, or, at least, analogous, to that of the new formation; 2ndly. Upon the absorbent system, so that the neighbouring glands become enlarged into a tumour, like that originally deposited; or, 3rdly, Upon the whole constitution, so that the poisonous secretions of the newly-formed part gain access to the circulating fluids, and tubercles of various forms, but of the same or an analogous character, become developed in some distant organs, or textures, which have no direct communication, except through the blood, with the parts in which the new structure was first formed.

*** Our centenary extract this week contains two historic medical names. Richard Bright, who gave his name to Bright's disease, was the first to connect albumin in the urine with dropsy, no one previously having suspected the kidney to be the organ implicated.

Cæsar Hawkins, an eminent man himself, is often confused with his grandfather, Sir Cæsar Hawkins. The name Cæsar had come down in the family from the sixteenth century. Sir Cæsar was sergeant-surgeon to King George II and King George III and his portrait by Hogarth is in the Royal College of Surgeons of England. His grandson, whose name appears above, was, like Sir Cæsar, on the staff of St. George's Hospital. As a student he worked under Everard Home and Benjamin Brodie; he taught anatomy in association with Charles Bell in the Windmill-street school; and he was president of the College of Surgeons of England in 1852 and again in 1861, being one of the last presidents to hold office twice, after an interval.—ED. L.

MEDICAL NEWS

University of Cambridge

The board of research studies has approved Prof. C. C. Okell, F.R.C.P., for the degree of doctor of science.

Royal College of Physicians of Edinburgh

A meeting of the college was held on May 4th with Dr. W. T. Ritchie, the president, in the chair. Dr. Douglas James Campbell (Grimsby) was introduced and took his seat as a fellow. Dr. George Abeysingha, Weera Wickramasuriya (Ceylon) was elected to the fellowship. The Freeland Barbour fellowship was awarded to Mr. Walter Tebrich, B.Sc.

Honour for Sir Patrick Laidlaw

The faculty of medicine of the University of Toronto has awarded the Charles Mickle fellowship to Sir Patrick Laidlaw, F.R.S., of the National Institute for Medical Research, London, for his contributions to practical medical research.

Royal Society of Arts

On Wednesday, May 26th, at 8.15 P.M., Prof. H. D. Kay, D.Sc., director of the National Institute for Research in Dairying of the University of Reading, will address this society on the biochemistry of milk secretion. Applications for tickets should be made to the secretary of the society, John-street, Adelphi, W.C.2.

National Physical Laboratory

Prof. W. L. Bragg, F.R.S., Langworthy professor of physics in the University of Manchester, has been appointed director of the National Physical Laboratory. He will take up his duties in the autumn.

Science and Peace

One of the commissions of this year's National Peace Congress, which meets in London from May 28th to 31st, is concerned with the contribution of science and medicine to peace. The chairman is Prof. S. Chapman, F.R.S., of the Imperial College of Science, and the introductory address will be given by Prof. P. M. S. Blackett. Particulars may be had from the National Peace Council, 39, Victoria-street, London, S.W.1.

International Rheumatism Congress

The annual international symposium organised by the Ligue Française contre le Rhumatisme will be held this year in Paris on Oct. 9th under the presidency of Prof. Laignel-Lavastine on radiotherapy in rheumatism. In the morning a clinical meeting will be held at Prof. M. Loeper's medical Clinic, Hôpital Saint-Antoine. At 3 P.M. the congress will meet at the Faculty of Medicine when Coste (Paris) will discuss radiotherapy, Piéry, Cluzet, and Milhaud (Lyons), emanotherapy, and Euzière and Castagne (Montpellier), the radio-active action of thermal waters. Further information may be had from the offices of the Journée du Rhumatisme, 23, rue du Cherche-Midi, Paris, VI.

Association of Registered Biophysical Assistants

At a meeting of the executive committee on April 15th it was agreed that this association, which was founded in 1932, should in future be known as the Society of Physiotherapists. The change of title is made desirable by the formation of the National Register of Medical Auxiliaries, in which the Roll of Biophysical Assistants is now incorporated. Membership of the Society of Physiotherapists will be limited to those termed physiotherapists in the National Register of Medical Auxiliary Services. The society is not an examining, qualifying, or registering body; its principal aim is to represent its members by making their work known to the medical profession and the public, thereby promoting the expert administration of physical methods of treatment and the ultimate elimination of the unqualified from the field of physiotherapy. Applications for membership may be addressed to the hon. secretary at 159, Victoria-street, London, S.W.1.

Lord Horder has been appointed a deputy-lieutenant for Hampshire.

Glasgow Royal Infirmary

As soon as space is available in the new premises in the Blind Asylum buildings, a fracture clinic is to be set up. Accommodation will be provided for both out-patients and in-patients with ten beds for men and ten for women.

International Leprosy Conference

The fourth International Leprosy Conference will be held at Cairo beginning on March 21st, 1938. This will be the first international conference to be arranged by the International Leprosy Association since its inauguration in 1931. Previous conferences were held at Berlin in 1897, at Bergen in 1909, and at Strasbourg in 1923. Further information may be had from the secretary, 131, Baker-street, London, W.1.

International Union against Tuberculosis

The Italian Fascist National Federation against Tuberculosis has placed at the disposal of the Union six scholarships each of the values of 2000 liras with board and lodging at the Carlo Forlanini Institute in Rome. The scholarships will be awarded to young physicians who are already familiar with tuberculosis problems and who wish to improve their knowledge of this branch of medicine. The kind of work undertaken at the institute will be arranged between the director of the institute and the candidate, and papers on the work must be submitted for publication in the first instance to the editor of the *Bulletin* of the International Union against Tuberculosis. The scholarships will be awarded at the next session of the executive committee which will meet in Lisbon in September. Applications should reach the secretariat of the Union, 66, Boulevard, St.-Michel, Paris, by July 5th.

Research in Tropical Medicine

The Medical Research Council, advised by their tropical medical research committee which was appointed after consultation with the Colonial Office (THE LANCET, 1936, **1**, 558) have decided to offer three junior fellowships to qualified medical men who wish to receive training for research work in tropical medicine. Preference will be given to candidates who have already had preliminary experience of methods of research in some branch of medical science. Subject to satisfactory reports, the fellowships will be tenable for three years. The first year will be spent at a school of tropical medicine; the second in doing research in the same or some other institution at home; and the third largely in work under direction at some centre in the tropics. The stipend will be at the rates of £300, £400, and £500 per annum in the successive years, with an additional allowance during service abroad and necessary expenses. In three years' time, at least one senior fellowship will be available for candidates who have held the junior fellowships mentioned above. This will be awarded for a further period of three years, carrying stipend at the rate of £600–£750 per annum, with an additional allowance during service abroad and expenses. The time will be spent mainly in research work in the tropics. The council are also prepared to consider immediate applications for senior fellowships from candidates who have had adequate experience in research work, whether already specially trained in tropical medicine or not.

The council intend to establish in due course, as suitable investigators become available as the result of the fellowships scheme, permanent and pensionable appointments for research work in tropical medicine, including senior posts. Members of this research staff will work partly in the tropics, and partly in institutions at home to which they will be attached. The exact terms of service are still undecided, but they will be not less favourable than those which apply to other Government appointments at home or overseas for men of similar professional standing. Inquiries may be addressed to the secretary of the tropical Medical Research Committee, 38, Old Queen-street, London, S.W.1, to whom applications should be sent not later than June 15th.

Alexandra Rose Day

Those who are willing to sell roses on Alexandra Day to benefit hospitals and charities for the sick are asked to communicate with Mrs. Leslie Morshead, 86, Eccleston-square, London, S.W.1.

Chadwick Public Lectures

On Wednesday, May 26th, at 5.30 P.M., Prof. J. G. Fitzgerald, director of the department of hygiene of the University of Toronto, will give a lecture, entitled Preventive Medicine—an Avenue of Good Will. The lecture will be held at Manson House, 26, Portland-place, London, W., and Sir William Collins will be in the chair. On Thursday, June 10th, at 5 P.M., at the Chelsea Physic Garden, Swan-walk, S.W., Mr. H. Gilbert-Carter, director of the University Botanic Garden at Cambridge, will speak on plants in health and disease. Further information may be had from the secretary of the trust, 204, Abbey House, Westminster.

The Royal Sanitary Institute

A sessional meeting will be held at Newcastle-upon-Tyne on Friday, May 28th, when a discussion on the difficulties of nutritional assessment will be opened by Dr. H. E. Magee, medical officer of the Ministry of Health, Dr. G. C. M. M'Gonigle, medical officer of health for Stockton-on-Tees, and Dr. J. C. Spence, hon. assistant physician to the Royal Victoria Infirmary, Newcastle-upon-Tyne. The meeting will be held in the Connaught Hall, Y.M.C.A. Buildings, Blackett-street, at 5 P.M. At 6 P.M. on Saturday, May 29th, in the City Hall, Sir John Orr, F.R.S., will address a public meeting on the national problem of food and health.

University of London Medical Graduates' Society

For the first time in a setting appropriate to its name, this society, on May 6th, held its annual dinner in the university's own home, the new buildings in Bloomsbury. The dinner, which had been preceded by the annual meeting, was attended by some 150 members and guests. After Dr. Dorothy Hare, the president, had drunk wine with the company and had given the loyal toast, Mr. H. Lightfoot Eason, vice-chancellor of the University, proposed her health and that of the society. He said he had been forbidden by her to give an account of the society, but he was very glad to see there that eminent gynæcologist, Sir StClair Thomson—for had he not been closely concerned with the society's birth? It was fitting that the profession should be represented by him in the Abbey at the Coronation Service, for no one more distinguished and deserving of that privilege could be found. Mr. Eason said he was glad that the society was created solely for social reasons and had no political activities. Just such objects were badly needed in the faculty to-day. Dr. Hare, responding, said that the occasion was a red-letter day in the society's history, for they were sitting in the University's own hall, eating its own food. The dinner, she said, would be the first opportunity many would have to see the interior of the new building. This had not been erected to solve a housing problem. It was "just a big idea" for the furtherance of education in the metropolis, and the City Corporation had itself contributed a large sum towards its cost. Hitherto there had been as little corporate form among the faculties as there was in an amœba; the chief objects of their society were adhesion to the university and cohesion between the medical graduates. The personal interest of every one of these was more necessary to the university than the tangible bricks and mortar, lectures and professors. She would mention at that time especially the work of Mr. McAdam Eccles in drawing into membership numerous overseas medical graduates. The chief event of the past year had been the official recognition of the society by the University, which Sir Edwin Deller, the late principal, had himself obtained a fortnight before his tragic death. They were very grateful to the University for the dignity and status its recognition had given the society. Sir Charlton Briscoe, president elect, proposed The Guests. He divided them into three groups. To those who were not graduates of the University—by their presence there a rule had been broken—he would say, "Although you can never be like us, be as like us as you're able to be." Others who, though they were graduates, had not joined the society, would not be blackmailed to join but would be offered every inducement. Thirdly, he welcomed the authorities in the persons of the vice-chancellor and Mr. W. Girling Ball, the dean of the faculty. The latter, responding, said that he himself was not a graduate, but he had always worked very hard to achieve closer coöperation between the various medical bodies in London. The president had agreed with him that one matter, for example, that needed looking into was the status of women medical students and why the three largest hospitals and medical schools in London should not admit them. He also thought that the rivalry between the twelve teaching hospitals of the city would disappear with the formation of a real university, and it had at last reached a stage when it could at least be seen. The society, he was sure, was soon to have a great part to play in the furtherance of that end. During the dinner Mr. Harry Brunning entertained the company, and to conclude the evening they were invited to inspect the parts of the University already completed, which included the senate room, some of the administrative offices, and the kitchens.

Appointments

DEITCH, H. I., M.S. Lond., F.R.C.S. Eng., has been appointed Medical Superintendent at the Halifax General Hospital.

OVENS, G. H. C., M.B. Lond., F.R.C.S. Eng., Surgical Registrar at St. Mary's Hospital, London.

RACKOW, A. M., M.B. Lond., D.M.R.E., Senior Assistant Radiologist to King's College Hospital.

THOMPSON, B. G., M.D. Edin., D.M.R.E., Junior Assistant Radiologist to King's College Hospital.

London County Council Hospital Staff.—The following appointments, promotion, and transfers are announced. A.M.O. (I) or (II) = Assistant Medical Officer, Grades I or II., D.M.O. = District Medical Officer; Temp. = temporary.

BRUCE, R. D., M.B., A.M.O. (I), Hackney;
MACKENZIE, IAN, M.B., A.M.O. (I), St. Giles';
EDWARDS, L. M., M.B., A.M.O. (I), St. Mary Abbots;
ROSE, ISAAC, M.B., A.M.O. (I), St. Olave's;
JAMES, ELIZABETH M., M.B., A.M.O. (II), Fulham;
BROWNE, OLIVE M., M.B., A.M.O. (II), Hackney;
WOLFSON, L. J., M.R.C.S., A.M.O. (II), Highgate;
BOUCHER, C. A., B.M., A.M.O. (II), New End;
RAMSAY, J. D., M.B., A.M.O. (II), New End;
HOGG, G. C. H., M.B., F.R.C.S., A.M.O. (II), St. James';
LIPPITT, W. N., M.R.C.S., A.M.O. (II), St. Olave's;
FORGIE, JANE R., M.B., House Physician, Downs;
WALTER, JOSEPH, B.M., House Physician, Dulwich;
MUNN, J. E. T., L.M.S.S.A., House Surgeon, Mile End;
THOMPSON, N. J. W., M.B., House Surgeon, Paddington;
HALES, SAMUEL, M.R.C.S., House Physician, St. Alfege's;
MAGUIRE, W. T., M.D. (Toronto), House Surgeon, St. Alfege's;
BOOKHALTER, SOPHIE, M.D., House Physician, St. Andrew's;
BRETT, E. St. M., L.R.C.P., House Physician, St. Andrew's;
STOCKINGS, G. T., M.B., House Physician, St. Giles';
ADAMS, J. C., M.R.C.S., House Physician, St. James';
SCOTT, J. S. H., M.R.C.S., House Physician, St. James';
CORMICK, JANET F., M.B., House Physician, St. Luke's, Chelsea;
BARRACLOUGH, RONALD, M.B., House Surgeon, St. Mary Abbots;
MACKENZIE, A. M., M.B., House Surgeon, St. Mary Abbots;
NEWCOMBE, A. R., M.B., Clinical Assistant, St. Mary Abbots;
THOMPSON, A. W., M.B., House Surgeon, St. Mary Abbots;
HAMILTON, MAX, M.R.C.S., House Physician, St. Mary Abbots;
COBLEY, J. F. C. C., M.B., House Physician, St. Olave's;
DILL-RUSSELL, P. W., M.R.C.S., House Physician, St. Olave's;
HAYMAN, A. A., L.R.C.P., Temp. D.M.O., City of Westminster;
WALSHAM, E. J., M.R.C.S., Temp. D.M.O., Balham;
FRIZELLE, G. M., M.D., Senior A.M.O. (II), St. Nicholas';
HARDING, KATHLEEN M. D., M.D., M.C.O.G., Senior A.M.O. (II), St. Pancras;
MATHESON, I. W., M.B., F.R.C.S., A.M.O. (I), Mile End;
MAYEUR, MARY H., M.D., A.M.O. (I), St. James';
GAULD, W. R., M.B., A.M.O. (II), Hackney;
MAY, QUEENIE I. E., M.R.C.S., A.M.O. (II) St. Charles'; and
ALLAN, D. Y., M.D., A.M.O. (I), St. Mary, Islington.

Certifying Surgeons under the Factory and Workshop Acts: Dr. HENDERSON GOW (Newbury District, Berks).

Medical Referee under the Workmen's Compensation Act, 1925: Dr. S. S. RENDALL, of Boston, Lincs., for the Boston, Holbeach, Sleaford, Spalding, Spilsby, and Skegness County Court Districts (Circuit No. 17).

Vacancies

For further information refer to the advertisement columns

Altrincham General Hosp.—Sen. and Jun. H.S.'s, at rate of £150 and £120 respectively.
Aylesbury Isolation Hosp.—Deputy Matron. Also Night Charge Nurse, £90 and £70 respectively.
Barnsley, St. Helen Municipal General Hosp.—M.O., £650.
Bedford County Hosp.—Second H.S., at rate of £150.
Belfast Royal Maternity Hosp.—Res. H.S., at rate of £100.
Birmingham and Midland Hosp. for Women.—H.S., at rate of £100.
Blackburn Royal Infirmary.—Res. H.S., £175.
Bradford Children's Hosp.—H.S., £100.
Brighton, Royal Sussex County Hosp.—H.P., £150.
Cardiff, King Edward VII Welsh National Memorial Association. Three Area Asst. Tuber. Physicians, each £500. Res. M.O., £350. Asst. Res. M.O., £200. Also Asst. Res. M.O. for Glan Ely Tuber. Hosp., £200.
Chelsea Hosp. for Women, Arthur-street, S.W.—Jun. H.S., at rate of £100.
City of London Hosp. for Diseases of the Heart, &c., Victoria Park, E.—H.P., at rate of £100.
Connaught Hosp., Walthamstow, E.—Sen. Res. M.O., at rate of £175. Also H.P., H.S., and Cas. O., each at rate of £110.
Coventry and Warwickshire Hosp.—Hon. Asst. Surgeon. Also Res. H.S., Cas. O., and Res. H.S. for Aural and Ophth. Depts., each £125.
Croydon Mental Hosp., Upper Warlingham, Surrey.—Asst. M.O., £350.
Dartford, Kent, City of London Mental Hosp.—Jun. Asst. M.O., £350.
Dewsbury and District General Infirmary.—Sen. H.S., £200. Also Second H.S., £150.
Downpatrick, Down County Mental Hosp.—Jun. Asst. M.O., £350.
East Ham Memorial Hosp., Shrewsbury-road, E.—H.S. to Spec. Depts., and Cas. O., at rate of £120.
Elizabeth Garrett Anderson Hosp., Euston-road, N.W.—Temp. Hon. Asst. Surgeon. Also Temp. Hon. Jun. Obstet. Surgeon.
Evelina Hosp. for Sick Children, Southwark, S.E.—H.P., at rate of £120.
Exeter, Royal Devon and Exeter Hosp.—H.S. to Ear, Nose, and Throat Dept., at rate of £150.
Farnborough Public Assistance Hosp.—Res. Asst. M.O., £250.
Gloucestershire Royal Infirmary, &c.—H.P., at rate of £150.
Gordon Hosp. for Rectal Diseases, Vauxhall Bridge-road, S.W.—Res. H.S., at rate of £150.
Goswell Women's Welfare Centre, 39, Spencer-street, E.C.—M.O.
Hastings, Royal East Sussex Hosp.—Jun. H.S., at rate of £150.
Hertford County Hosp.—H.S., at rate of £180.
Hellingly, East Sussex County Mental Hosp.—Sen. Asst. M.O., £600.
Hosp. for Epilepsy and Paralysis, 4, Maida Vale, W.—Hon. Anæsthetist.
Hosp. for Sick Children, Great Ormond-street, W.C.—Res. H.P. and Res. H.S., each at rate of £100.
Hosp. of St. John and St. Elizabeth, 60, Grove End-road, N.W.—Ophth. Surgeon.
Hosp. for Tropical Diseases, 25, Gordon-street, W.C.—H.P., at rate of £120.
Hosp. for Women, Soho-square, W.C.—Res. M.O., at rate of £100.
Huddersfield County Borough.—Asst. School M.O., £500.
Hull Royal Infirmary.—H.S. to Ophth. and Ear, Nose, and Throat Depts. Also Second Cas. O., each at rate of £150.
Ilford Borough.—Res. M.O. for Maternity Home, £400.
Infants Hosp., Vincent-square, Westminster.—Hon. Clin. Assts. to Out-patients. Also H.P., at rate of £100.
Isleworth, West Middlesex and County Hosp.—Cas. M.O., at rate of £350.
Kensington Royal Borough.—Deputy M.O.H., £900.
Kettering and District General Hosp.—Res. M.O. and Second Res. M.O., at rate of £160 and £140 respectively.
King's College, Strand, W.C.—Two Demonstratorships in Dept. of Anatomy, each £100 per term.
Liverpool Heart Hosp.—Hon. Asst. Physician.
London County Council.—Coroner for County of London, £1700. Also Part-time M.O., at rate of £40.
London Lock Hosp., 283, Harrow-road, W.—Res. M.O. to Male Dept., at rate of £175.
London University.—University Readership in Obstetrics and Gynæcology for British Postgraduate Med. School, £800.
Manchester, Ancoats Hosp.—Hon. Reg. for Ear, Nose, and Throat Dept. Res. Surg. O., £200. Also Orthopædic Reg., £50.
Manchester, Park Hosp., Davyhulme.—Second Res. M.O., at rate of £225.
Manchester Royal Infirmary.—Med. Chief Asst., £300.
Manchester and Salford Hosp. for Skin Diseases.—Two Asst. M.O.'s, £100.
Manchester, Withington Hosp.—Res. Asst. M.O., at rate of £200.
Middlesex County Council.—Asst. M.O., £600. Also Asst. Dental O., £500.
Miller General Hosp., Greenwich-road, S.E.—Two H.P.'s. Also H.S., each at rate of £100.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Hon. Asst. Surgeon. Hon. Asst. to Throat and Ear Dept. Also Jun. Surg. Reg., £150.
Newport, Mon., Royal Gwent Hosp.—Two H.S.'s, each at rate of £135.
Nottingham General Hosp.—Two Res. Cas. O.'s. Also H.S. for Ear, Nose, and Throat Dept., each at rate of £150.
Oxford Eye Hosp., Walton-street.—H.S. to Ophthalmic Dept., £150.
Plymouth, Prince of Wales's Hosp.—Res. Surg. O., at rate of £225. Jun. H.S., at rate of £120. Also Hon. Physician, Hon. Physician with charge of Out-patients, and Hon. Ophth. Surg.
Plymouth Royal Eye Infirmary.—Hon. Phys.
Princess Elizabeth of York Hosp. for Children, Shadwell, E.—H.P., H.S., and Cas. O., each at rate of £125.
Princess Louise Kensington Hosp. for Children, St. Quintin-avenue, W.—H.S., at rate of £120–£150.
Queen Mary's Hosp. for the East End, Stratford, E.—Res. M.O., Two Cas. and Out-patients O.'s, each at rate of £150. Also Two H.S.'s, H.P., Obstet. H.S., and Res. Anæsthetist and H.P., each at rate of £120.
Reading, Royal Berkshire Hosp.—Cas. O. Also H.S. to Spec. Depts., each at rate of £150.
Rochester, St. Bartholomew's Hosp.—H.P. Also Cas. O. with charge of Orthopædic Beds, each at rate of £150.
Rotherham Hosp.—Cas. H.S., £150.
Royal Free Hosp., Gray's Inn-road, W.C.—1st H.P., Sen. Res. M.O., £150. Also Res. Cas. O., at rate of £150.
Royal Naval Medical Service.—M.O.'s.
Royal Waterloo Hosp. for Children and Women, Waterloo-road, S.E.—H.S., at rate of £100.
Salford Royal Hosp.—Psychiatrist, £52.
Salisbury General Infirmary.—Res. M.O., £250. Also H.P., at rate of £125.
St. Bartholomew's Hosp., E.C.—Asst. Physician and Asst. Director to Med. Professorship Unit.
Shrewsbury, Royal Salop Infirmary.—Res. H.P., at rate of £160.
Southampton, Royal South Hants and Southampton Hosp.—Locum Tenens Radium Officer, 12 guineas per week.
Southend-on-Sea General Hosp.—Surg. Reg., £275. Also Cas. O., at rate of £100.
Staffordshire County Council.—Res. Asst. M.O. for Wordsley Public Assistance Institution, at rate of £300.
Stoke-on-Trent, Burslem, Haywood, and Tunstall War Memorial Hosp.—Res. H.S., at rate of £175.
Stoke-on-Trent, North Staffs. Royal Infirmary.—H.S. for Aural and Ophth. Dept., at rate of £150.
Stroud General Hosp.—Res. M.O., at rate of £160.
Sunderland Royal Infirmary.—Two H.S.'s and H.P., each £120.
Surrey County Council.—Asst. M.O., £600. Also Jun. Asst. M.O. for County Sanatorium, at rate of £350.
Taunton and Somerset Hosp.—H.P., at rate of £100.
Victoria Hosp. for Children, Tite-street, S.W.—Physio-therapist, £50.
Weir Hosp., Grove-road, Balham, S.W.—Jun. Res. M.O., £150.
West Ham County Borough.—2nd Asst. Res. M.O. for Central Home, Leytonstone, £350.
West London Hosp., Hammersmith-road, W.—Jun. Asst. M.O. for V.D. Dept., £350. Also H.P. and Two H.S.'s, each at rate of £100.
Wickford, Runwell Hosp.—Asst. Res. Physician, £350.
Willesden General Hosp., Harlesden-road, N.W.—Hon. Clin. Assts. to Out-patient Dept.
Wolverhampton, New Cross Hosp.—Res. Asst. M.O., £200.
Woolwich and District War Memorial Hosp., Shooters-hill, S.E.—Three Hon. Anæsthetists.
Worksop, Victoria Hosp.—Sen. and Jun. Resident, £150 and £120 respectively.

Births, Marriages, and Deaths

BIRTHS

BADO.—On May 3rd, at Plymouth, the wife of Major A. J. Bado, R.A.M.C., of a son.

COOPER.—On May 3rd, at Milford Lodge, near Stafford, the wife of Dr. T. V. Cooper, of a son.

DAWES.—On May 3rd, at Wotton-under-Edge, Gloucestershire, the wife of Dr. W. A. Dawes, of a daughter.

JAUCH.—On May 4th, at Grantham, the wife of F. Joselin Jauch, F.R.C.S. Eng., of a daughter.

TENNENT.—On May 4th, at Sutherland-avenue, W., the wife of Thos. Tennent, M.D. Glasg., of a son.

WARNER.—On May 1st, at Devonshire-place, W., the wife of E. C. Warner, F.R.C.P. Lond., of a daughter.

DEATHS

BADGEROW.—On May 9th, in London, Sir George Washington Badgerow, C.M.G., C.V.O., M.D. Toronto, F.R.C.S. Edin.

BENSTED.—On May 5th, at Brookmans Park, Herts, Lewin Bensted, M.R.C.S. Eng., late of Muswell-hill, aged 65.

GOLDIE.—On May 4th, Walter Leigh Mackinnon Goldie, O.B.E., F.R.C.S. Eng., of Leamington Spa.

KERR.—On May 7th, at Dundee, Charles Kerr, O.B.E., M.B. Edin.

MAY.—On May 3rd, at Edgbaston, Birmingham, Bennett May, C.B.E., F.R.C.S. Eng., late Emeritus Professor of Surgery at the Birmingham University, aged 92.

SANGER.—On May 5th, in London, Frederick Sanger, M.D. Camb., of Tanworth-in-Arden, near Birmingham.

SCOTT MACGREGOR.—On May 4th, George Scott MacGregor, M.D. Edin., of Glasgow.

STURGES-JONES.—On May 10th, at Herne-hill, S.E.24, Wilfrid Edward Sturges-Jones, M.R.C.S. Eng., late of Chichester, and H.M. Vice-Consul, Interior Peru, in his 73rd year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

A COMMERCIAL ART CENTRE

A MEETING for the inauguration of a commercial art centre was held recently at the Royal Society of Arts, and some of our readers may be interested in the project. The intention is to establish in London a centre where specimens of the work of practising commercial artists can be displayed. Those behind the scheme find that manufacturers, advertisers, and their agents find a difficulty in choosing the right artist for the advancement of a publicity scheme; it is difficult both to obtain a sufficient range of a particular artist's work at short notice, and to discover new talent. The artist who is not working to a particular commission experiences difficulty in keeping touch with the general market, and only a few artists possess so many specimens of their work that they are able to keep possible buyers adequately informed. The establishment of a centre where an up-to-date range of the work of available artists could be inspected would solve the difficulties. The proposed commercial art centre would be situate in London and supported by the Society of Industrial Artists and the Incorporated Society of Artists in Commerce. It is not intended that the centre should act as an agency for the sale of work; its effect would be to place buyers in direct touch with artists or their agents. The scheme has been worked out in some detail both financially and otherwise, and has received promises of support from responsible sources. Those interested in the movement should communicate with the secretary of the organising committee, Commercial Art Centre, 4, Bedford-square, London, W.C.

A DOYEN OF MICROCHEMISTRY

THE celebration by Prof. Hans Molisch of his eightieth birthday has been made the occasion for the issue of a special commemoration number of the journal *Mikrochemie* [1] in view of the valuable contributions which Prof. Molisch has made to microchemistry. The number contains 47 papers by 45 different authors, many of whom have been his pupils. The contributions cover a very wide range of topics and vary considerably in size, one of the longest being by Prof. H. Fischer on the constitution of chlorophyll, which covers some 30 odd pages. The subjects dealt with are by no means exclusively botanical and cover all branches of inorganic and organic analysis as applied to foodstuffs, drugs, pharmaceutical products, and the detection of traces of carotene in blood.

THE "MAXAID" HEARING-AID

TWO so-called "pocket-model" hearing-aids with valve-amplification have recently been produced by the Peto-Scott Company, of 62, High Holborn, London, W.C.1. In both the apparatus is incorporated in a small unusually flat case measuring 6½ by 5⅜ by 1¾ in. A small self-fitting ear-piece may be used, or the more usual disc-shaped one held by a light spring-band. The low-tension current is supplied by two dry cells with a normal life of 25 to 30 working hours, or an accumulator may be substituted at an extra cost of 7*s.* 6*d.*; the high-tension current is provided by a small dry battery stated to give several months' service. Both forms of dry cell are of well-known makes, easily obtainable, the high-tension one costing 3*s.* 9*d.*, and the low-tension 3½*d.* each, so that upkeep is inexpensive. A volume-control is provided, and also a tone-control adjusted by means of a set-screw inside the case. The latter is intended to be set to suit the wearer's individual hearing and then to be left undisturbed; it is a useful feature which enables the instrument to be adapted to cases with loss of either high or low tones. Model 52 P.L. employs two stages of amplification and costs 14 guineas, while model 52 P.L.C., costing 19 guineas, has three stages and, in addition, a crystal microphone. This latter model, which we have examined, is very sensitive and at the same time free from background noise. The makers suggest that the instrument may be kept in a man's pocket during use, but this is hardly to be recommended. Although small, it is rather too large for the ordinary pocket, the microphone is not then in the best position for receiving sounds, and friction against the clothes sets up disturbing noises; better results are obtained with the instrument on the table or on the knee. It is a very neat and efficient apparatus.

PROPAGANDA AGAINST VENEREAL DISEASE

A VALIANT attempt to dispel the fog of ignorance and misconception still surrounding the subject of venereal disease in the public mind has been made by Mr. Carl Warren [1] who urges that these diseases if jointly attacked by doctors, public health authorities, and the public could be virtually prevented or cured. Without intelligent coöperation from the patient the medical profession is hopelessly handicapped; hence the importance of teaching the public the facts and fallacies concerning syphilis and gonorrhœa and the value of such a book as this. The Scandinavian countries have already achieved a large measure of success in reducing the incidence of venereal disease and there seems no reason why America and this country should not follow suit provided public enlightenment kept pace with medical knowledge and organisation. The book is written simply and accurately. The author obviously has no very high opinion of the existing standard of sexual ethics in America. Although the statistics are drawn almost entirely from American sources the book could be read with profit by young persons, and particularly by those concerned with education, in any country.

A HOSPITAL DIARY

Messrs. Fredk. Aldridge, 34, Paternoster-row, E.C.4, issue annually a diary particularly directed to the needs of the hospital world. The issue for 1937 is edited by Mr. F. P. Carroll. The diary contains, in addition, informative articles on law and engineering which should prove particularly helpful to the efficient management of a hospital. Ample space is left for entries in the body of the diary, and a thumb-index facilitates reference. A comprehensive buyers' guide arranged alphabetically under the names of the articles is included in the diary. The price of the diary is 5*s.* 6*d.*

CONTRACEPTION: PRINCIPLES AND TECHNIQUE

PROBABLY nurses, health visitors, and midwives receive more inquiries about contraceptive principles and methods than any other member of the community, and a book [2] written essentially for their instruction deserves attention. Dr. Griffith writes well if somewhat dogmatically. He discusses the advantages both to the individual and the State of the proper spacing of families and emphasises the urgent need to check dysgenic breeding. He relates the various devices, both past and present, used for limiting families, including abortion, infanticide, coitus interruptus, and sexual abstinence, and draws the conclusion that the soundest method is scientific birth control. As a member of the medical subcommittee of the National Birth Control Association he can speak with some authority on methods of

[1] *Mikrochemie:* Festschrift zum 80 Geburtstag von Hofrat Prof. Dr. Hans Molisch. Vienna: Emil Haim and Co. 1936. Pp. 454. M.28.

[1] On Your Guard! By Carl Warren, B.A., B.S., M.S.J. Foreword by M. J. Exner, M.D. New York: Emerson Books, Inc. 1937. Pp. 160. $1.

[2] Voluntary Parenthood. By Edward F. Griffith, M.R.C.S., L.R.C.P. London: Heinemann. 1937. Pp. 141. 5*s.*

contraception and he describes briefly those which have best stood the test of clinical and laboratory investigation. Sexual education and ethics, the meaning of marriage, and the importance of family stability are given considerable space, but the chapters on genetics, the biology of cell division, and the internal secretions are somewhat sketchy. A few unfortunate inaccuracies have crept in: on p. 103, for example, the author speaks of the ovarian follicular hormone (or folliculin) when he obviously means the corpus luteum hormone (progestin or progesterone). An index, a list of voluntary and municipal clinics giving birth control advice, the Ministry of Health's memoranda on birth control, and a short bibliography are appended.

THE "BREVIS" IONIZER

AT the present time zinc ionisation is being largely used in the treatment of hay-fever and similar nasal affections. The Victoria Electric Plant Company, of Spenser-street, Westminster, have produced a convenient instrument for supplying the necessary electric current. It consists of a polished wood case measuring about 18 by 7½ by 7 in., containing an "Ever Ready" dry battery delivering a current of 30 volts, together with an instrument-board on which is mounted a voltmeter actuated by a push switch for checking the output from the battery, and a milliammeter with a red line at the 3 milliampere mark. The rheostat to regulate the strength of current is controlled by two rotating knobs giving a fine and very even adjustment. There is also a space for storing the necessary leads and terminals. The price is 10 guineas, and a somewhat smaller model without a cover to the instrument panel is supplied at 8 guineas. It is a well-made and portable machine for the application of ionisation for any purpose.

CORRIGENDUM.—Insulin Shock Treatment of Schizophrenia. In the article by James, Freudenberg, and Cannon, published in our last issue, the word subcutaneous in the second line on p. 1102 under the cross heading Phases of the Treatment should read *intramuscular*.

Medical Diary

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
WEDNESDAY, May 19th.
Surgery: Subsection of Proctology. 5 P.M. annual general meeting. Sir Edmund Spriggs: A Review of Disorders and Diseases of the Colon, Founded on the Examination of the Alimentary Canal in 5800 Cases.
THURSDAY.
Dermatology. 5 P.M. (Cases at 4 P.M.), annual general meeting. Dr. S. M. Whitteridge (introduced by Dr. H. W. Barber): 1, Benign Lymphogranuloma. Dr. H. MacCormac: 2, Molluscum Sebaceum. Dr. A. D. K. Peters: 3, Granulosis Rubra Nasi. Dr. A. D. K. Peters and Dr. A. N. Macbeth: 4, Partial Resolution of Leucoplakia Vulvæ under Œstrin Therapy. Dr. F. Jacobsohn: 5, Case for Diagnosis: ? Tuberculoid Leprosy. Dr. R. T. Brain: 6, Case for Diagnosis. Dr. R. E. A. Price and Mr. Pask (introduced by Dr. W. O'Donovan): Infantile Prurigo. (With film.)
Neurology. 8 P.M., annual general meeting. Prof. M. Kroll (Moscow): Remote Symptoms in Nervous Diseases.
FRIDAY.
Radiology. 7 P.M., annual general meeting.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, Manson House, 26, Portland-place, W.
THURSDAY, May 20th.—8.15 P.M., Dr. Ellis H. Hudson: Bejel, the Endemic Syphilis of the Euphrates Arab.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.
THURSDAY, May 20th.—2.30 P.M. (County Rooms, Hotel-street, Leicester), Dr. Ross Ashby: The Incidence of Mental Disorders and Allied Conditions in a large Group of the General Population. Dr. C. J. C. Earl and Dr. McKail: The Present Requirements for the Diploma in Psychological Medicine. (Mental Deficiency Committee.)
FRIDAY.—2.30 P.M. (Leicestershire and Rutland Mental Hospital, Narborough), Dr. K. K. Drury and Mr. C. E. J. Freer: Suicide of a Voluntary Patient: an Abortive Case of Negligence. Dr. D. Prentice: Syphilis in Mental Hospital Practice. Dr. I. J. Davies: Schizophrenia.

SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Thornhaugh-street, W.C.
FRIDAY, May 21st.—5 P.M., Dr. W. G. Savage and Dr. E. H. T. Nash: The Future of Obstetrical Practice.

TUBERCULOSIS ASSOCIATION.
FRIDAY, May 21st.—5.15 P.M. (Manson House, 26, Portland-place), Dr. A. Stanley Griffith: Bovine Tuberculosis in Man. 8.30 P.M., Dr. James Watt and Dr. Burton Wood: Radiological Classification of Pulmonary Tuberculosis.

SOCIETY OF RADIOTHERAPISTS OF GREAT BRITAIN AND IRELAND.
FRIDAY, May 21st.—5 P.M. (11, Chandos-street, W.), Mr. G. Gordon-Taylor, Dr. J. H. D. Webster, Dr. H. Burrows, Dr. R. T. Payne, Mr. R. F. Phillips: Malignant Tumours of the Testis.

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY.
THURSDAY, May 20th.—8.30 P.M. (11, Chandos-street, W.), Dr. Elsie Warren: The Psychology of Minor Ailments. Dr. C. W. J. Brasher: The Present Position of Medical Psychology.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.
THURSDAY, May 20th.—9.15 P.M. (Royal Northern Hospital, Holloway-road, N.), Dr. S. Kinnier Wilson: Epilepsy and other Fits.

SOUTH-WEST LONDON MEDICAL SOCIETY.
WEDNESDAY, May 19th.—9 P.M. (Bolingbroke Hospital, Wandsworth-common), Dr. Wilfrid Sheldon: Abdominal Distension in Children.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

UNIVERSITY OF LONDON.
TUESDAY, May 18th.—5.30 P.M. (University College, Gower-street, W.C.), Mr. E. S. Russell, D.Sc.: Ancient Biological Conceptions.
THURSDAY and FRIDAY.—5.30 P.M., Prof. Charles Singer: Emergence of Modern Physiological Doctrines to the end of the Eighteenth Century, with Special Reference to the Growth of Views on the Circulation of the Blood.

UNIVERSITY OF BIRMINGHAM.
TUESDAY, May 18th.—4 P.M. (Medical Lecture Theatre), Prof. Arvid Wallgren: Erythema Nodosum.
THURSDAY.—4 P.M., Prof. Wallgren: Childhood Infection and Adult Type of Pulmonary Tuberculosis. (Ingleby lectures.)

ST. MARY'S HOSPITAL, W.
TUESDAY, May 18th.—5 P.M. (Institute of Pathology and Research), Mr. W. R. Thompson, D.Sc., F.R.S.: The Biological Control of Insect and Plant Pests.

BRITISH POSTGRADUATE MEDICAL SCHOOL, Ducane-road, W.
WEDNESDAY, May 19th.—Noon, clinical and pathological conference (medical). 2 P.M., Dr. J. Gray: Peptic Ulcer and Gastric Carcinoma. 3 P.M., clinical and pathological conference (surgical).
THURSDAY.—2.15 P.M., Dr. Duncan White: Radiological Demonstration. 3.30 P.M., Mr. A. K. Henry: Demonstrations of the Cadaver of Surgical Exposures.
FRIDAY.—2 P.M., operative obstetrics. 2.30 P.M., Mr. Russell Howard: Diseases of the Breast. 3 P.M., clinical and pathological conference (obstetrics and gynæcology).
Daily, 10 A.M. to 4 P.M., medical clinics, surgical clinics and operations, obstetrical and gynæcological clinics and operations.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.
TUESDAY, May 18th.—10 A.M., medical wards. 11 A.M., surgical wards. 2 P.M., operations, medical, surgical, and throat clinics.
WEDNESDAY.—10 A.M., children's ward and clinic. 11 A.M., medical wards. 2 P.M., gynæcological operations, medical, surgical, and eye clinics.
THURSDAY.—10 A.M., neurological and gynæcological clinics. Noon, fracture clinic. 2 P.M., operations, medical, surgical, genito-urinary, and eye clinics.
FRIDAY.—10 A.M., medical wards, skin clinic. Noon, lecture on treatment. 2 P.M., operations medical, surgical, and throat clinics.
SATURDAY.—10 A.M., children's and surgical clinics. 11 A.M., medical wards.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, May 17th, to SATURDAY, May 22nd.—ST. JOHN CLINIC AND INSTITUTE OF PHYSICAL MEDICINE, Ranelagh-road, S.W., Sat. and Sun., course in physical medicine.—ST. JOHN'S HOSPITAL, 5, Lisle-street, W.C., afternoon course in dermatology.—MAUDSLEY HOSPITAL, Denmark-hill, S.E., afternoon course in psychological medicine.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, May 20th.—2 P.M., Dr. B. E. Schlesinger: Periodic Vomiting, Headache, Pyrexia. 3 P.M., Mr. H. C. Apperly: The Care of the Child's Teeth.
Out-patient clinic at 10 A.M. and ward visits at 2 P.M.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle-street, W.C.
TUESDAY, May 18th.—5 P.M., Dr. J. E. M. Wigley: Napkin Area Eruptions.
WEDNESDAY.—5 P.M., Dr. I. Muende: Pathological Demonstration.
FRIDAY.—5 P.M., Dr. W. J. O'Donovan: Tuberculosis of the Skin.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.
WEDNESDAY, May 19th.—4.15 P.M. (Royal Infirmary), Mr. Arthur Jacobs: Urological Cases.